DUPLICATE ALSO

METEOROLOGICAL OFFICE
-6 SEP 1995
LIBRARY

UK METEOROLOGICAL OFFICE GLOBAL DATA MONITORING REPORT

AUGUST, 95

Data Assimilation
Meteorological Office
London Rd
Bracknell
Berkshire
RG12 2SZ

This report has not been published. Permission to quote from it should be obtained from the Head of Data Assimilation

ORGS UKMO U

National Meteorological Library
FitzRoy Road, Exeter, Devon. EX1 3PB

Distribution List

Mr B Sumner	NMC, Victoria, Australia
Dr H W Christ	Deutscher Wetterdienst, Hamburg, Germany
Ms C Nelson	NMC, Washington, USA
Mr B Lacroix	SCEM METEO-FRANCE.
Mr E A Meindl	National Data Buoy Centre, Stennis Space Center, USA
Dr H Mitchell	Recherche en Prévision Numérique, Quebec, Canada.
Mr G Verner	Canadian Meteorological Centre, Quebec, Canada
Permanent Rep. with WMO	Moscow, Russia
Hydrometcentre of the Russian Federation	Moscow, Russia
Mr Nobuo Sato	JMA, Tokyo, Japan
Dr B Strauss	ECMWF, Reading, UK
Dr M J Uddstrom	Met. Service, Wellington, New Zealand
Mr R S Bell	Met. Office, Bracknell, UK
Mr J R Leighton	Met. Office, Bracknell, UK
Mr R W Lunnon	Met. Office, Bracknell, UK
Dr C C Heasman	Met. Office, Bracknell, UK
Mr D B Shaw	Met. Office, Bracknell, UK
Mr S G Smith	Met. Office, Bracknell, UK
National Meteorological Library	Met. Office, Bracknell, UK

CONTENTS

1. Introduction

2. Global Data Monitoring Statistics

3. Composite Observing Systems for the North Atlantic (COSNA)

...oooOOOooo...

1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

DR C. Heasman
Head of Observation Processing and Monitoring Section
Data Assimilation
Meteorological Office
London Road
Bracknell
Berkshire
United Kingdom
RG12 2SZ

2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIBU observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12 UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of >60 ms^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference > 60 m s^{-1} have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-12 soundings at 500 km resolution and figures 28-30 show the same statistics for NOAA-14. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

Figure	Layer (hPa)
25/28	850-1000
26/29	100-300
27/30	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area 10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics **(Geopotential Height and Windspeed at 100 and 500 hPa)** for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

...oooOOOooo...

Revisions

1. May 95 Monitoring statistics for NOAA-11 removed. Figures 25-27 now show data for NOAA-12
2. May 95 Notes giving details of observations included in wind direction statistics clarified and corrected.
3. August 95 Monitoring statistics for NOAA-14 added with figures 28-30.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for ships, fixed buoys and platforms.

Standard of comparison :Background field from Bracknell global model.

Observation times :00, 06, 12, 18 UTC

Elements monitored :Mean sea level pressure (hPa).
:Wind speed (m s^{-1}).
:Wind direction (Degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors. **N.B. a positive bias indicates the observation is veered to the background.**

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT :15 hPa (pressure)
:25 m s^{-1} (vector wind)

SELECTION CRITERIA :NOBS ≥ 20 , and one or more of the following:

1.|bias|	≥ 4 hPa	(pressure),
	≥ 5 m s^{-1}	(wind speed),
	≥ 30 degrees	(direction).
2.SD	≥ 6 hPa	(pressure),
	≥ 80 degrees	(direction).
3.PGE	≥ 25	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE									
CG2241	ALL	MSLP	SUR	27	13	48	0.3	-14.4	14.4
CZ9742	ALL	MSLP	SUR	42	42	100	0.0	0.0	0.0
C6FA6	ALL	MSLP	SUR	38	0	0	1.1	-5.8	5.9
C6JT	ALL	MSLP	SUR	29	0	0	1.4	-4.4	4.6
DNJS	ALL	MSLP	SUR	26	0	0	1.6	-6.5	6.7
DVRUK4D	ALL	MSLP	SUR	39	0	0	2.3	6.0	6.5
D5NE	ALL	MSLP	SUR	30	0	0	1.4	6.3	6.5
ELIQ7	ALL	MSLP	SUR	29	0	0	1.6	-4.8	5.0
ELRE5	ALL	MSLP	SUR	68	0	0	4.7	6.8	8.2
ESDU	ALL	MSLP	SUR	21	0	0	2.4	7.7	8.0
FNAT	ALL	MSLP	SUR	93	0	0	1.1	-5.0	5.1
KXDB	ALL	MSLP	SUR	23	10	43	1.9	-11.6	11.8
LACF4	ALL	MSLP	SUR	47	0	0	1.6	-4.5	4.8
OXWJ2	ALL	MSLP	SUR	35	0	0	1.8	6.4	6.6
OZBL2	ALL	MSLP	SUR	50	0	0	1.2	6.8	6.9
P3XM4	ALL	MSLP	SUR	49	2	4	1.8	-4.9	5.2
TFLE	ALL	MSLP	SUR	23	0	0	2.0	-5.0	5.4
UDYO	ALL	MSLP	SUR	51	5	10	4.7	-5.2	7.1
UFOJ	ALL	MSLP	SUR	22	0	0	2.3	-4.7	5.3
UHVW	ALL	MSLP	SUR	31	0	0	2.7	4.5	5.2
UPKU	ALL	MSLP	SUR	40	1	2	1.5	-4.4	4.7
UTTT	ALL	MSLP	SUR	28	1	4	1.1	-5.1	5.2
VCQL	ALL	MSLP	SUR	55	0	0	1.5	-6.1	6.3
VMGW	ALL	MSLP	SUR	22	0	0	0.9	7.7	7.8
VRUI9	ALL	MSLP	SUR	51	0	0	1.4	-4.1	4.3
VSBT2	ALL	MSLP	SUR	29	0	0	1.1	-10.1	10.2
WCB5820	ALL	MSLP	SUR	48	3	6	3.2	8.4	9.0
WPPO	ALL	MSLP	SUR	27	0	0	1.1	4.7	4.8
WTEF	ALL	MSLP	SUR	25	0	0	0.9	-6.1	6.2
YJWZ7	ALL	MSLP	SUR	44	0	0	1.1	-7.0	7.1
3EAY5	ALL	MSLP	SUR	27	0	0	0.7	-4.1	4.2
3ESE9	ALL	MSLP	SUR	39	0	0	1.1	5.0	5.1
3FLS2	ALL	MSLP	SUR	33	0	0	0.8	-9.0	9.1
9MBQ6	ALL	MSLP	SUR	21	0	0	3.2	-6.1	6.9
WIND SPEED									
ELHR9	ALL	SPEED	SUR	51	0	0	3.0	5.9	6.6
FNKA	ALL	SPEED	SUR	34	2	6	7.8	6.9	10.4
GQEK	ALL	SPEED	SUR	33	0	0	8.2	8.6	11.9
HSGX	ALL	SPEED	SUR	33	0	0	6.1	10.0	11.7
MQLS9	ALL	SPEED	SUR	20	0	0	7.4	5.6	9.3
OUEK	ALL	SPEED	SUR	69	1	1	4.7	7.0	8.4
P3XM4	ALL	SPEED	SUR	44	1	2	3.0	7.1	7.7
VRUC4	ALL	SPEED	SUR	25	0	0	3.6	6.7	7.6
Y5EQ	ALL	SPEED	SUR	30	0	0	3.9	6.2	7.3
3EFY6	ALL	SPEED	SUR	31	0	0	6.5	7.1	9.6
3EPY3	ALL	SPEED	SUR	36	0	0	1.3	-5.7	5.8
3EZL3	ALL	SPEED	SUR	26	0	0	4.2	5.5	6.9
46054	ALL	SPEED	SUR	118	0	0	2.6	5.3	5.9

WIND DIRECTION

CG2614	ALL	DIRN.	SUR	56	0	0	46.6	33.5	57.4
FNKA	ALL	DIRN.	SUR	24	2	8	57.6	-37.8	68.9
UDYO	ALL	DIRN.	SUR	27	0	0	81.9	9.2	82.4
44013	ALL	DIRN.	SUR	58	0	0	26.7	-34.6	43.7
46030	ALL	DIRN.	SUR	89	0	0	22.6	33.8	40.7
46053	ALL	DIRN.	SUR	70	0	0	40.0	-45.7	60.8
46146	ALL	DIRN.	SUR	55	0	0	67.6	-37.8	77.4
51011	ALL	DIRN.	SUR	88	0	0	12.1	-31.7	33.9

AVAILABILITY – SHIP/SYNOP – AUGUST 1995

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 19046

FIGURE 1

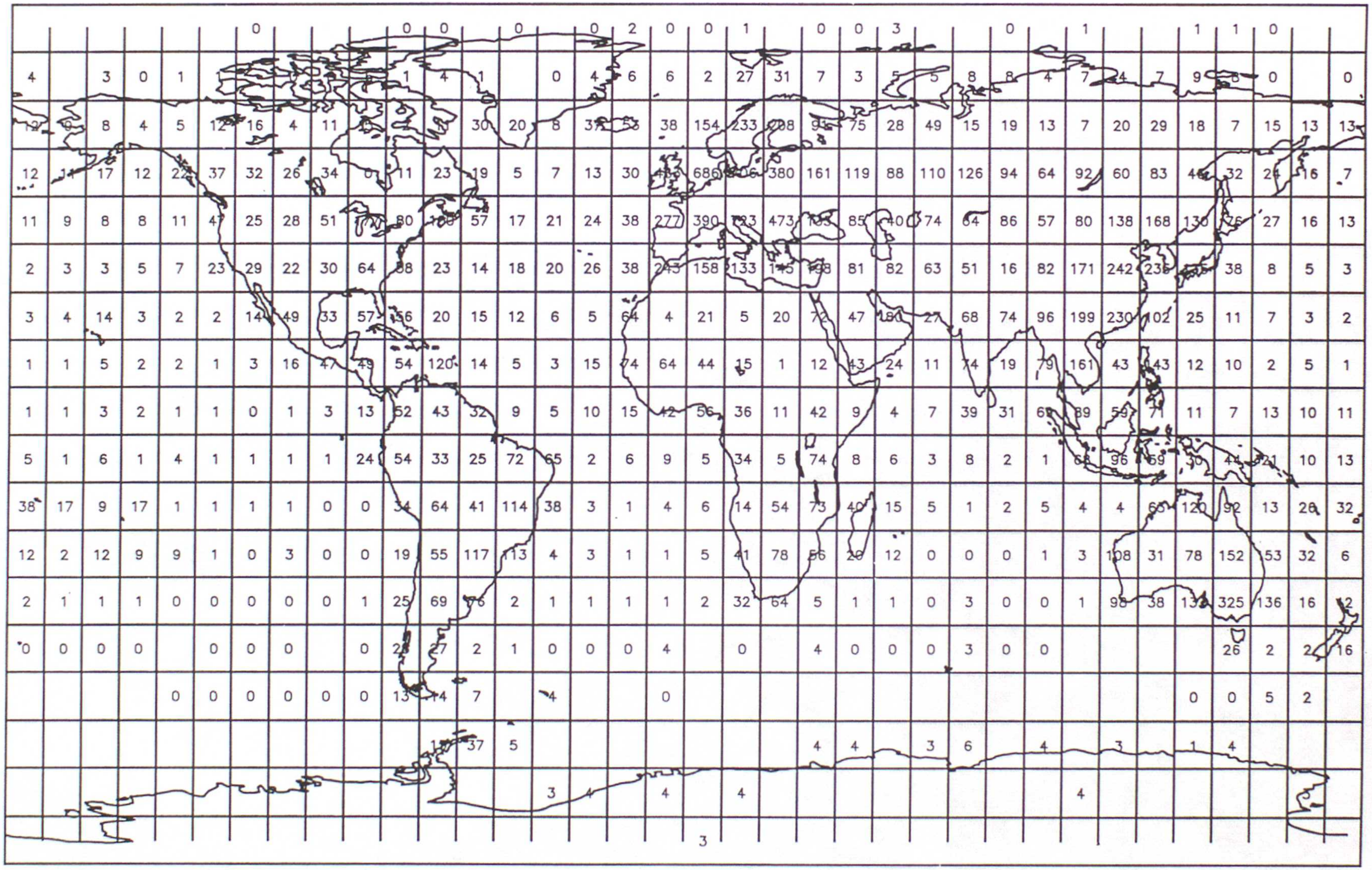


TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for drifting buoys.
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Mean sea level pressure (hPa). :Wind speed (m s^{-1}). :Wind direction (degrees).
Parameters monitored	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors. **N.B. a positive bias indicates the observation is veered to the background.**
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa :25 m s^{-1}	(pressure) (vector wind)

SELECTION CRITERIA	:NOBS	$\geq$ 20 , and one or more of the following:	
	1.|bias|	$\geq$ 4 hPa	(pressure),
		$\geq$ 5 m s^{-1}	(wind speed),
		$\geq$ 30 degrees	(direction).
	2.SD	$\geq$ 6 hPa	(pressure),
		$\geq$ 80 degrees	(direction).
	3.PGE	$\geq$ 25.	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
14919	-41.3	37.6	ALL	MSLP	SUR	264	145	55	5.5	8.6	10.2
16937	-35.3	71.7	ALL	MSLP	SUR	87	0	0	1.9	-4.5	4.9
16944	-50.8	74.6	ALL	MSLP	SUR	294	148	50	5.9	5.2	7.8
16946	-46.9	97.3	ALL	MSLP	SUR	284	60	21	7.9	0.8	8.0
16949	-39.8	39.6	ALL	MSLP	SUR	267	157	59	4.8	-6.5	8.1
16950	-48.6	51.4	ALL	MSLP	SUR	297	202	68	4.9	-6.4	8.0
17604	-31.6	76.9	ALL	MSLP	SUR	366	171	47	3.1	9.9	10.3
17608	-47.1	3.9	ALL	MSLP	SUR	657	313	48	5.8	6.0	8.3
21524	42.8	136.7	ALL	MSLP	SUR	218	218	100	0.0	0.0	0.0
21573	30.9	164.9	ALL	MSLP	SUR	282	155	55	3.2	-1.9	3.7
55901	-43.8	139.2	ALL	MSLP	SUR	264	44	17	3.9	8.1	9.0
55903	-48.5	143.7	ALL	MSLP	SUR	287	214	75	1.8	-12.0	12.1
56903	-33.0	108.1	ALL	MSLP	SUR	244	244	100	0.0	0.0	0.0
56907	-52.9	141.7	ALL	MSLP	SUR	320	108	34	7.6	1.2	7.7
56908	-55.6	149.4	ALL	MSLP	SUR	314	89	28	7.6	3.3	8.3
56914	-45.6	108.3	ALL	MSLP	SUR	25	22	88	4.3	9.9	10.8
56918	-53.2	122.4	ALL	MSLP	SUR	300	33	11	6.0	0.6	6.1
WIND SPEED											
46657	46.6	-144.6	ALL	SPEED	SUR	277	0	0	2.4	-6.9	7.3
WIND DIRECTION											
46558	40.2	-158.3	ALL	DIRN.	SUR	52	0	0	18.3	-34.5	39.1
46657	46.6	-144.6	ALL	DIRN.	SUR	201	0	0	39.1	67.2	77.7
52656	7.3	151.6	ALL	DIRN.	SUR	26	0	0	60.7	-36.3	70.7

AVAILABILITY – DRIBU – AUGUST 1995

FIGURE 2

MAIN HOURS ONLY
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 4481

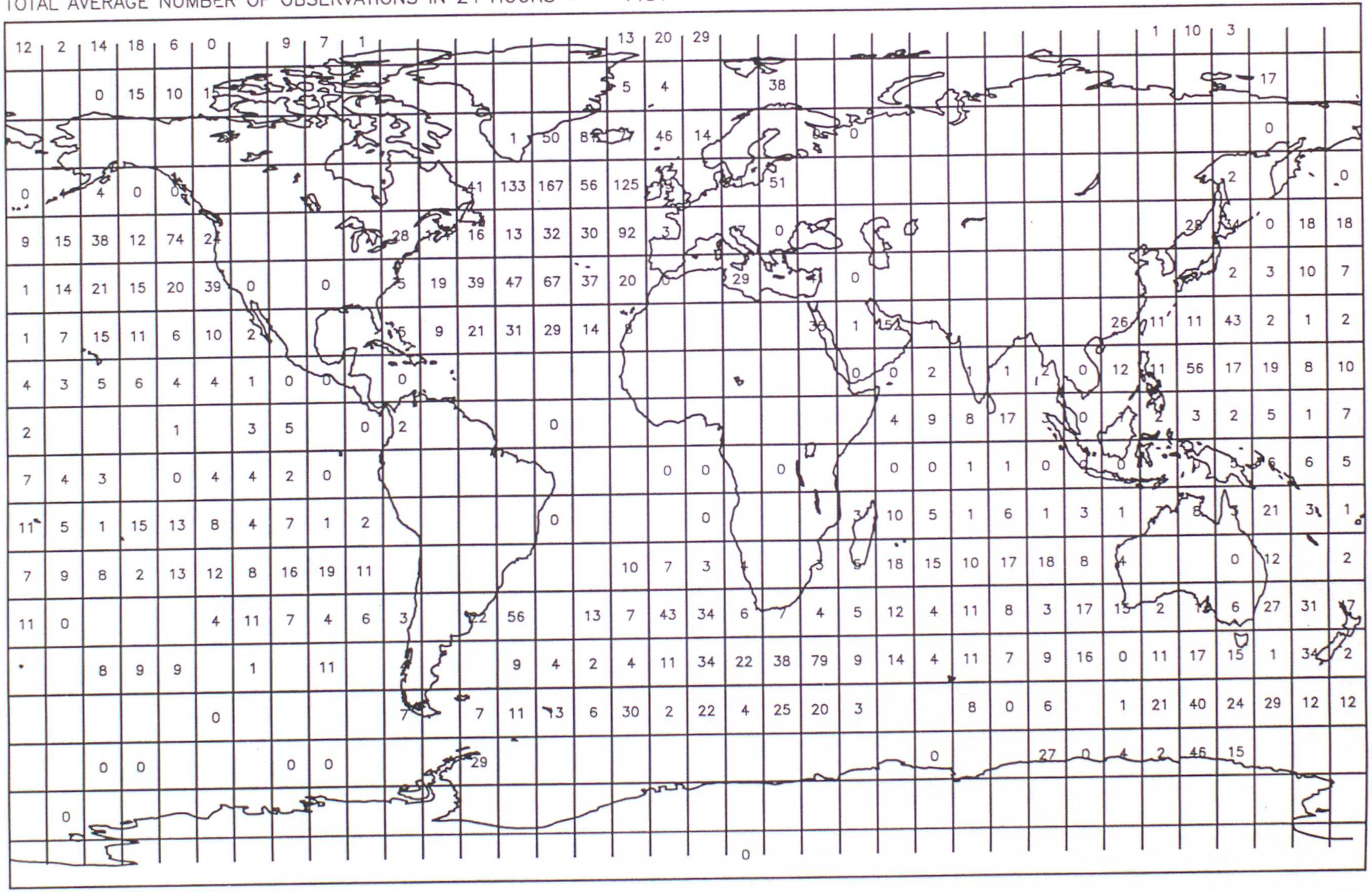

12 2 14 18 6 0 9 7 1 13 20 29 1 10 3
0 15 10 1 5 4 38 17
1 50 8 7 46 14 0 0
0 4 0 0 41 133 167 56 125 51 2 0
9 15 38 12 74 24 28 16 13 32 30 92 3 0 28 0 18 18
1 14 21 15 20 39 0 0 5 19 39 47 67 37 20 29 0 2 3 10 7
1 7 15 11 6 10 2 5 9 21 31 29 14 8 36 1 15 26 11 11 43 2 1 2
4 3 5 6 4 4 1 0 0 0 0 0 2 1 1 2 0 12 11 56 17 19 8 10
2 1 3 5 0 2 0 4 9 8 17 3 0 2 3 2 5 1 7
7 4 3 0 4 4 2 0 0 0 0 0 0 1 1 0 0 5 6 6 5
11 5 1 15 13 8 4 7 1 2 0 0 3 10 5 1 6 1 3 1 7 8 5 21 3 1
7 9 8 2 13 12 8 16 19 11 10 7 3 4 3 5 18 15 10 17 18 8 4 0 12 2
11 0 4 11 7 4 6 3 22 56 13 7 43 34 6 7 4 5 12 4 11 8 3 17 15 2 12 6 27 31 17
8 9 9 1 11 9 4 2 4 11 34 22 38 79 9 14 4 11 7 9 16 0 11 17 15 1 34 2
0 7 7 11 13 6 30 2 22 4 25 20 3 8 0 6 1 21 40 24 29 12 12
0 0 0 0 29 0 27 0 4 2 46 15
0
0

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Mean sea level pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1.|bias|	≥ 4 hPa
	2. SD	≥ 6 hPa
	3.PGE	≥ 25.

N.B. For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.
For stn ht < 500m, mslp is that as reported by the station where available.

WMO REGION 1:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60445	36.2N	5.4E	1081	S8	104	0	0	81	1.4	4.8	5.0
60468	35.6N	6.2E	1052	S8	96	95	99	16	0.0	1.1	1.1
60511	35.3N	1.4E	1127	S8	73	73	100	100	0.0	0.0	0.0
60670	24.6N	9.5E	1054	S8	102	5	5	94	1.7	8.8	9.0
63333	11.1N	39.7E	1916	MS	62	0	0	89	1.5	7.4	7.6
63453	8.8N	39.8E	1062	S	38	3	8	97	1.4	12.3	12.4
63478	5.1N	44.6E	320	MS	32	0	0	0	1.1	6.8	6.9
63801	4.9S	29.6E	885	S8	22	1	5	95	0.9	8.6	8.6
68014	19.6S	18.1E	1411	S8	91	0	0	73	1.4	-5.8	6.0
68442	29.1S	26.3E	1354	S8	120	0	0	99	0.9	-5.8	5.9
68752	32.8S	27.4E	524	S8	29	0	0	100	1.0	-8.5	8.6

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
29999	52.5N	99.8E	1570	S8	108	108	100	90	0.0	0.0	0.0
30554	54.5N	113.6E	995	M	61	0	0	100	1.1	10.8	10.9
36870	43.4N	77.0E	663	MS	61	61	100	98	0.0	0.0	0.0
40701	39.3N	44.4E	1470	MS	70	0	0	96	0.9	6.1	6.2
40719	37.3N	49.6E	-7	S	22	0	0	5	1.1	4.0	4.1
40740	36.8N	54.3E	1287	MS	83	3	4	13	1.4	-4.0	4.2
40743	36.2N	57.7E	941	MS	110	1	1	11	0.9	-4.8	4.9
40762	35.3N	59.2E	1333	M	107	5	5	99	2.8	-13.0	13.3
40763	35.2N	58.5E	1060	MS	42	0	0	31	0.9	-5.7	5.8
40783	32.4N	49.7E	1972	MS	41	0	0	78	1.1	-4.9	5.0
40789	33.8N	55.1E	921	MS	71	2	3	97	0.8	8.5	8.5
40836	30.8N	51.7E	1880	MS	75	0	0	72	1.1	7.7	7.8
40859	29.0N	53.7E	1383	MS	75	3	4	96	1.0	8.9	9.0
41244	24.2N	55.8E	299	M	114	0	0	1	1.5	8.3	8.4
41254	23.1N	57.7E	1755	S8	87	87	100	100	0.0	0.0	0.0
41396	16.0N	48.9E	700	S	23	0	0	74	2.2	6.1	6.5
44292	47.9N	107.0E	1338	MS	103	0	0	31	1.2	4.7	4.9
44416	28.6N	81.6E	720	MS	37	1	3	22	2.5	4.1	4.8
44477	27.0N	87.4E	1445	S8	33	33	100	100	0.0	0.0	0.0
47022	40.8N	128.2E	1206	S	61	0	0	13	1.2	4.0	4.2
52602	38.8N	93.4E	2734	S	123	0	0	7	1.3	-4.3	4.5
56444	28.5N	98.9E	3488	S	124	124	100	98	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	104	0	0	97	3.1	7.0	7.7
57816	26.5N	106.7E	1222	MS	122	120	98	100	0.1	14.7	14.7

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80099	7.1N	70.7W	128	M	35	0	0	0	1.7	-4.5	4.8
80315	3.0N	75.3W	443	S	51	0	0	22	2.2	-4.4	4.9
80434	9.2N	66.0W	125	MS	27	0	0	0	1.8	-5.3	5.6
80475	7.6N	72.1W	327	MS	48	0	0	58	1.8	-4.2	4.6
82392	3.7S	40.4W	83	MS	43	0	0	37	5.8	-5.4	7.9
82704	7.6S	72.7W	170	MS	73	1	1	3	2.4	-5.4	5.9
82825	8.8S	63.1W	95	MS	68	0	0	0	1.8	-5.2	5.5
83208	12.7S	60.1W	652	MS	99	0	0	16	1.5	5.4	5.6
83214	10.3S	54.9W	285	MS	45	0	0	0	1.0	-6.9	7.0
83235	12.3S	46.4W	660	MS	71	1	1	97	0.9	6.9	7.0

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
83295	13.4S	39.9W	755	MS	38	0	0	92	0.6	-4.0	4.0
83319	14.7S	52.4W	315	MS	65	0	0	0	1.1	-4.1	4.2
83332	14.1S	46.4W	950	MS	81	33	41	100	0.6	14.2	14.2
83408	14.3S	43.8W	556	MS	67	1	1	99	1.8	11.3	11.4
83423	16.7S	49.3W	729	MS	86	0	0	73	1.3	-5.0	5.2
83488	17.8S	42.9W	1097	MS	82	82	100	99	0.0	0.0	0.0
83512	18.5S	54.8W	286	MS	80	1	1	19	3.2	-6.7	7.4
83531	18.6S	46.5W	896	MS	59	1	2	68	1.0	-7.1	7.2
83577	19.8S	47.9W	743	MS	37	0	0	8	0.7	-4.0	4.1
83587	19.8S	43.9W	850	MS	87	0	0	97	1.0	-7.8	7.9
83689	21.3S	43.8W	1171	MS	59	1	2	76	0.9	4.6	4.7
83704	22.3S	53.9W	369	MS	77	5	6	32	3.4	-8.8	9.4
84455	6.5S	76.4W	282	MS	86	0	0	1	2.8	4.4	5.2
84472	7.1S	78.5W	2622	S	52	1	2	88	2.2	-5.6	6.0
84501	8.1S	79.0W	30	MS	123	0	0	0	1.7	4.3	4.6
84542	9.4S	77.6W	2760	S	42	0	0	0	2.0	4.0	4.5
84658	12.6S	69.2W	266	MS	103	0	0	1	2.3	5.5	6.0
84686	13.6S	72.0W	3249	S	121	1	1	1	2.0	-5.4	5.8
84782	18.1S	70.3W	469	MS	121	1	1	12	2.1	8.2	8.5
85312	19.8S	63.9W	992	S	49	1	2	90	2.6	-9.0	9.4
85394	22.8S	64.3W	381	MS	45	0	0	24	2.9	5.8	6.5
85406	18.3S	70.3W	58	M	123	0	0	7	1.7	5.7	5.9

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
76118	30.4N	109.7W	1040	MS	26	0	0	96	2.1	-9.8	10.0
76373	25.3N	105.8W	1967	MS	62	59	95	100	4.1	11.6	12.3
76539	22.1N	101.0W	1871	MS	86	1	1	67	1.6	-4.5	4.8
76632	20.1N	98.7W	2417	MS	37	1	3	92	1.2	-5.8	5.9
76658	19.3N	103.6W	723	MS	26	26	100	19	0.0	0.0	0.0
76726	18.9N	99.3W	1560	MS	64	0	0	100	1.3	-7.2	7.3
76762	17.5N	99.5W	1360	MS	58	5	9	95	1.0	11.4	11.4
76840	16.2N	93.9W	64	MS	59	0	0	0	1.4	4.1	4.3
76848	16.3N	92.1W	1530	MS	92	19	21	98	1.1	-13.0	13.0

WMO REGION 5:

NO SUSPECTS IN THIS REGION

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	87	0	0	95	1.0	-5.1	5.2
04301	83.6N	33.4W	4	MS	95	4	4	45	4.4	4.5	6.3
04313	80.6N	13.7W	10	MS	95	33	35	1	1.7	0.3	1.7
08221	40.5N	3.6W	633	MS	118	0	0	98	1.0	6.0	6.1
11346	47.3N	12.8E	917	S	90	0	0	16	1.2	-4.5	4.7
15052	47.4N	25.6E	1541	S8	120	0	0	78	1.5	-4.5	4.7
16020	46.5N	11.3E	1461	MS	90	90	100	0	0.0	0.0	0.0
16614	40.4N	21.3E	604	MS	105	2	2	97	1.0	-6.9	7.0
17084	40.6N	35.0E	837	MS	119	0	0	100	1.2	6.8	6.9
17260	37.1N	37.4E	855	MS	112	110	98	100	0.1	14.7	14.7
40184	31.8N	35.2E	809	S8	122	0	0	97	0.9	5.1	5.2

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89208	90.0S	0.0W	2835	S7	87	87	100	17	0.0	0.0	0.0
89264	71.4S	68.9W	780	S8	88	4	5	34	3.5	5.8	6.8
89757	73.8S	55.7E	2775	S7	66	65	98	27	0.0	-12.7	12.7
89803	68.5S	102.2E	2118	S7	71	5	7	66	4.2	-9.7	10.6
89805	74.1S	109.8E	3070	M	65	25	38	15	4.5	-2.1	5.0
89811	66.7S	112.9E	1362	S8	71	5	7	76	3.1	-9.3	9.8
89814	66.0S	111.1E	10	S	80	17	21	18	3.4	-4.0	5.2
89828	74.5S	123.0E	3280	S7	89	9	10	24	3.0	6.2	6.9
89860	74.2S	160.3E	1772	S8	86	0	0	6	3.6	-4.8	6.0
89861	74.5S	160.5E	1525	S8	63	3	5	16	2.9	-7.8	8.3
89863	74.9S	163.1E	30	MS	32	0	0	34	3.8	-7.6	8.5
89866	77.4S	163.8E	120	MS	87	0	0	32	4.1	5.3	6.7

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :70.0 - 500.0 hPa

Elements monitored :TEMP in °C ; WIND in m s^{-1}

Parameters monitored

:N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS :10.0 °C ; 60 m s^{-1} Vector Wind

SELECTION CRITERIA :N REP $\geq$ 20

		TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAA	86	0	2	2.2	0.8	88	0	3	0	9.5	1.2
AAL	5465	0	1	1.7	0.1	5444	0	2	0	7.9	1.7
AAN	269	2	3	1.7	-0.4	257	0	2	0	8.0	1.1
AAR	2246	1	1	1.6	-0.3	2226	0	2	0	7.7	1.5
ACA	1374	0	1	2.1	0.1	1408	0	2	0	7.6	1.2
ACI	60	0	0	1.5	0.5	60	0	0	0	7.9	0.9
ACU	45	0	0	1.5	-0.8	44	0	0	0	6.3	0.7
AEA	304	14	100	4.6	2.1	295	0	10	1	8.5	1.3
AEL	723	1	4	1.7	-0.4	732	0	4	0	7.6	1.1
AFL	379	2	100	2.6	0.9	381	0	6	1	9.9	2.2
AFR	1452	1	4	1.8	-0.1	1467	0	5	0	7.5	1.6
AIC	58	3	9	2.5	-1.1	57	0	4	0	11.3	2.5
AIH	217	0	2	1.6	0.2	224	0	3	0	8.7	1.7
AJJ	60	0	0	2.1	-0.5	78	0	100	0	11.1	2.5
AME	25	4	12	1.9	0.5	26	0	12	0	7.3	2.1
AMT	592	1	2	1.6	0.1	608	0	2	0	6.6	1.6
AMX	199	0	2	1.4	0.0	200	0	1	0	7.6	1.6
ANA	937	0	1	1.6	-0.6	934	0	2	0	8.2	1.7
ANZ	3472	1	2	1.9	-0.1	3445	0	1	0	7.9	1.4
AOM	759	1	2	1.6	0.8	760	0	3	0	7.3	1.6
ARG	20	0	5	1.5	-0.3	20	0	5	0	7.6	0.7
ARP	83	0	2	2.1	1.0	80	0	3	3	5.5	-0.1
ASY	26	0	0	1.4	0.7	26	0	0	0	6.4	0.4
AUA	78	0	4	2.0	0.0	79	0	5	0	7.3	2.2
AVA	434	1	3	1.8	0.2	436	0	4	0	8.2	1.7
AVN	54	0	0	1.3	0.1	53	0	2	0	9.6	0.1
AZA	573	0	2	1.8	-0.2	576	0	2	0	7.9	1.8
BAL	450	1	13	1.7	-0.4	455	1	13	0	7.9	1.3
BAW	1726	1	2	1.9	0.0	1730	0	3	0	7.6	1.3
BBB	73	1	7	2.1	-0.8	73	0	10	0	8.0	2.3
BWA	361	2	2	1.8	0.9	364	0	5	2	6.8	1.4
CAL	2087	0	1	1.5	-0.1	2082	0	2	1	8.1	1.7
CCA	160	3	3	2.1	0.1	160	0	29	2	8.9	2.0
CDN	2457	0	1	1.8	0.2	2459	0	2	0	8.0	1.8
CES	155	1	3	1.5	0.2	156	1	5	0	8.4	1.6
CFG	944	0	2	1.7	-0.7	952	0	3	1	7.5	1.0
CKS	124	0	1	1.4	0.4	124	1	5	0	8.8	1.8
CKT	128	1	8	1.8	0.1	124	0	7	0	8.2	0.7
CLI	230	0	2	2.2	0.6	227	0	2	1	7.2	1.2
CLX	76	0	0	1.6	-0.6	76	0	0	0	6.3	1.3
CMI	1284	1	2	1.6	0.3	1287	0	5	2	8.3	2.6
CMM	301	0	13	2.0	0.1	305	0	13	0	7.8	1.9
COA	892	1	2	1.6	0.7	899	0	2	1	6.5	0.9
CPA	64	3	3	1.5	-0.8	64	0	2	0	7.6	0.6
CRL	524	1	3	1.5	0.4	528	0	3	1	7.1	1.3
CSA	26	0	0	1.5	-0.3	26	0	4	0	11.0	3.1
CTM	160	1	14	2.5	-1.0	165	0	18	1	9.5	2.6
CUB	611	2	16	3.1	2.0	614	0	100	0	11.9	3.1
DAF	34	0	6	2.9	0.1	35	0	0	0	7.3	1.9
DAL	6255	0	1	1.9	0.6	6102	0	2	0	7.6	1.4
DHL	447	2	100	3.5	-1.6	451	0	4	1	8.9	0.9
DLH	3134	0	7	2.1	0.2	3124	0	10	3	7.7	1.3
DOA	388	1	11	1.8	0.5	388	0	11	0	8.4	1.5
EIA	68	0	9	1.9	-0.8	72	0	8	0	8.7	1.6
ELY	161	1	6	2.4	0.0	169	0	5	0	8.2	0.9
EVA	1952	0	1	1.7	-0.8	1949	0	2	0	8.0	1.7
FDX	945	0	2	1.8	0.5	952	0	3	0	7.6	1.3
FIN	644	0	3	1.9	0.3	639	0	4	1	7.9	1.1
FJI	630	2	2	1.6	0.8	624	0	1	0	8.1	0.8

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
FMN	29	0	0	0.9	0.5	29	0	0	0	11.3	1.8
FNY	22	0	0	0.9	0.5	23	0	0	0	7.5	2.6
GAF	121	1	3	2.1	0.2	124	0	3	0	7.7	1.0
GFA	42	0	0	1.7	0.2	42	0	0	0	7.5	1.7
GIA	279	1	3	1.8	0.6	279	0	0	0	6.9	2.2
HAL	1386	1	1	1.2	0.2	1387	0	1	0	6.8	1.8
HLA	35	0	11	2.4	-1.2	36	0	17	0	11.7	-0.2
HLF	143	1	6	1.7	-0.9	143	0	3	0	8.6	1.2
HRH	48	0	0	1.9	0.3	48	0	0	0	9.1	1.4
IBE	2944	1	12	1.7	0.4	2923	0	14	0	8.4	1.6
ICE	452	0	1	2.0	-0.4	441	0	2	0	7.3	1.2
JAA	67	0	0	1.3	0.7	68	0	3	0	7.3	2.4
JAL	7480	0	1	1.6	0.0	7479	0	2	1	7.6	1.6
JAZ	99	0	0	1.6	1.1	99	0	4	1	9.0	2.1
KAC	23	0	4	1.3	-0.7	23	0	0	0	8.7	1.7
KAL	4196	1	1	1.8	0.0	4190	0	2	0	8.2	1.5
KIW	48	4	4	2.9	2.5	47	0	9	0	11.2	-1.2
KLM	2717	0	2	1.9	0.0	2705	0	3	1	7.9	1.5
LDA	141	0	5	1.7	-0.9	141	0	6	0	7.9	0.5
LDI	365	1	1	1.7	-1.0	360	0	3	0	7.1	1.2
LIB	476	2	4	1.8	0.6	476	0	9	5	7.6	1.0
LOT	652	0	0	2.0	-0.4	652	0	2	0	8.2	0.7
LTU	794	0	4	1.7	0.4	768	0	5	0	8.0	1.4
MAH	23	0	0	2.2	0.5	23	0	0	0	8.5	2.4
MAS	389	1	1	1.7	-0.5	393	0	3	0	9.1	1.7
MDA	156	1	2	2.0	-0.8	157	0	4	0	9.6	1.0
MPH	842	1	3	2.0	-0.6	835	0	3	1	7.4	0.8
MRS	60	2	20	4.1	-3.0	60	0	5	0	10.9	4.2
NAT	21	0	0	1.5	0.5	21	0	0	0	7.4	3.0
NCA	590	1	2	1.7	0.2	590	0	3	1	8.5	1.3
NGA	91	1	2	1.9	0.9	97	0	100	3	13.0	1.9
NUG	54	0	100	2.0	-1.9	54	0	100	0	3.8	0.7
NWA	10488	0	2	2.0	0.7	10498	0	3	1	7.8	1.5
OAL	34	0	6	1.8	1.0	35	0	6	0	8.7	2.1
PAC	86	1	2	1.8	0.7	85	0	0	0	7.0	1.9
PAL	1054	2	3	1.9	-0.4	1058	0	4	2	8.9	1.8
PAO	210	2	3	1.8	0.1	209	0	1	0	7.2	1.0
PNL	82	0	5	2.4	0.7	81	0	2	0	8.9	0.6
QFA	1921	1	2	1.8	0.3	1905	0	2	1	7.6	1.2
QFO	31	0	0	0.9	0.8	31	0	0	0	4.9	1.8
RAF	157	0	1	1.7	0.1	156	0	3	0	9.6	2.7
RAT	21	0	14	2.9	1.1	24	0	17	0	10.0	4.2
RBA	26	0	0	1.8	1.0	26	0	0	0	8.1	3.9
RIA	257	2	73	2.4	1.3	265	0	9	0	10.1	2.8
RJA	51	0	0	1.9	0.9	53	0	0	0	6.5	2.0
RKA	52	0	0	1.4	-0.8	51	0	0	0	6.8	0.4
RON	55	0	2	1.6	0.7	54	0	2	0	9.4	0.0
ROY	37	0	5	2.3	-0.8	36	0	3	3	7.0	-0.5
RRR	280	1	17	2.2	-0.3	281	0	22	1	10.0	2.0
SAA	195	1	1	1.6	-0.4	197	1	2	1	6.7	1.2
SAB	71	0	1	1.6	0.0	72	0	1	0	6.9	1.3
SAS	1615	0	1	2.1	-0.3	1607	0	1	1	7.7	1.3
SIA	1582	0	1	1.6	-0.6	1584	0	2	1	8.2	1.7
SOL	62	0	0	1.5	0.5	61	0	0	0	7.8	1.4
SPP	339	1	6	1.3	-0.3	331	0	9	1	7.3	1.3
SVA	212	5	6	1.8	0.1	226	0	5	0	8.9	1.1
SWR	187	1	6	1.9	-0.4	188	0	6	0	9.8	1.9
TAP	924	1	7	1.6	-0.3	923	0	7	0	8.3	1.8
TEJ	164	1	11	1.7	0.6	161	0	14	2	7.9	1.8

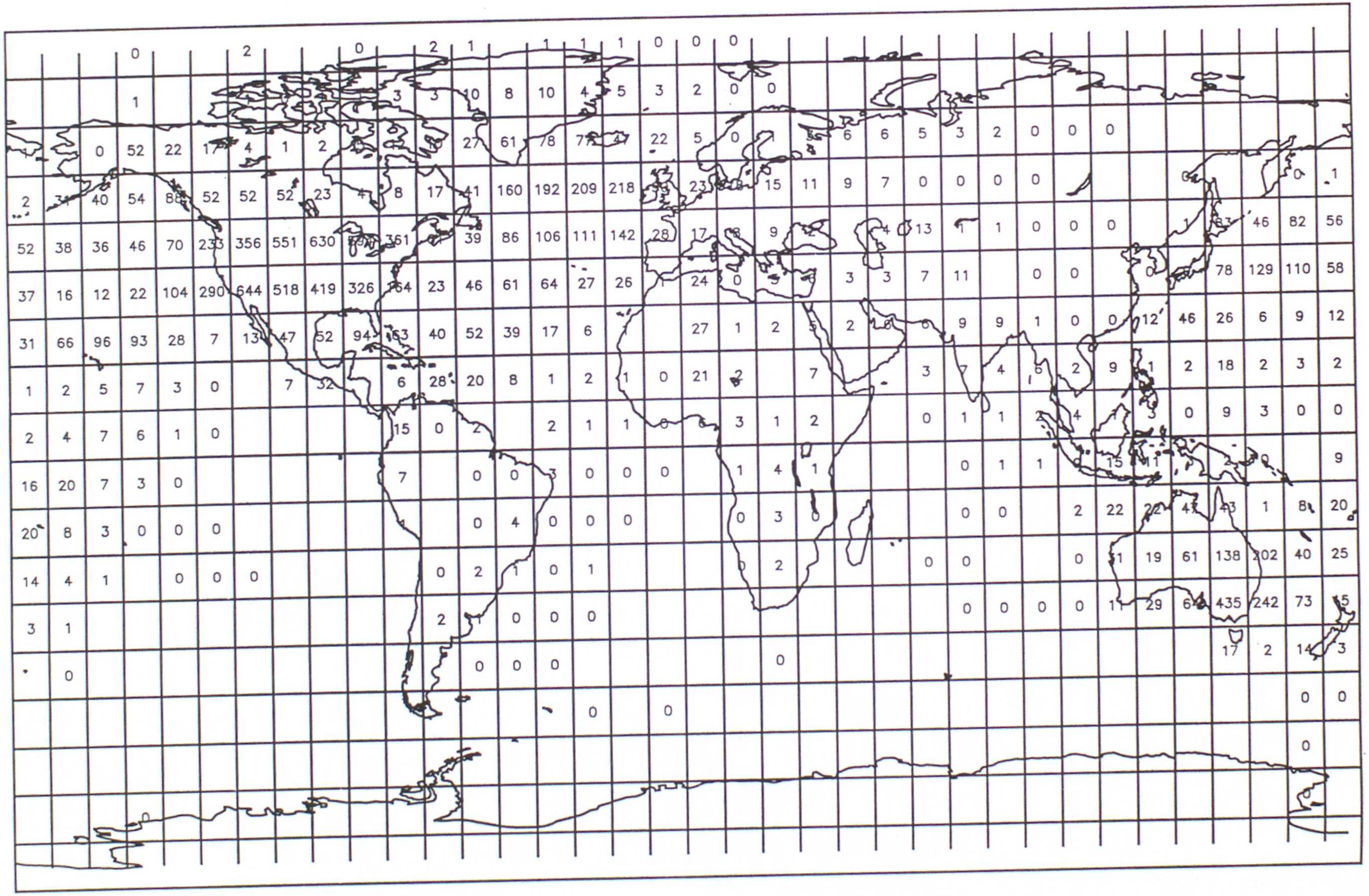
	TEMPERATURE				WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
THA	366	1	1	1.6	-0.5	362	0	3	0	8.4	1.3
TOW	198	1	5	1.7	0.2	206	0	3	0	8.7	1.2
TSC	145	1	1	1.9	0.5	149	0	4	0	10.3	2.8
TWA	1629	1	2	1.9	-0.1	1622	0	3	0	8.2	1.5
UAL	84220	1	2	1.1	0.1	84260	0	2	0	5.9	0.8
UKR	28	0	14	3.2	1.7	28	0	32	0	20.1	1.8
ULE	228	0	4	1.4	-0.1	225	0	6	0	9.3	2.0
UPS	873	1	8	1.6	-0.3	881	0	9	1	7.9	1.5
USA	271	1	2	1.9	-0.6	269	0	3	0	8.0	1.7
VIA	607	0	2	1.5	0.6	607	0	4	2	6.2	1.6
VIR	265	0	1	1.4	-0.3	266	0	1	0	7.8	2.6
VRG	77	1	3	1.6	0.6	80	0	8	0	12.3	1.2
VSP	143	1	1	1.6	0.5	143	0	1	0	8.4	2.7
WOA	208	2	2	1.7	0.5	211	0	1	0	7.7	1.5
AN	28837	0	2	1.5	0.2	28608	0	1	0	6.8	1.3
BA	17793	0	21	1.5	0.5	17764	0	21	0	7.0	1.5
DL	19155	0	100	1.4	0.0	19155	0	100	0	6.2	1.4
KL	11766	1	28	1.6	0.8	11758	0	9	0	7.0	1.5
LH	2606	0	5	1.5	0.3	2600	0	5	0	6.1	1.1
NW	44818	0	1	1.3	0.1	44818	0	1	0	5.6	0.7
QF	10521	0	1	1.2	0.3	10506	0	1	0	6.4	1.0
M	257	2	98	3.5	1.2	260	0	98	0	11.1	2.6
N	338	0	2	2.5	0.6	349	0	2	0	8.0	1.6

MEAN DAILY COUNT OF AIRCRAFT 70 – 500 HPA

AUGUST 1995

OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

FIGURE 3


0 2 0 2 1 1 1 1 0 0 0
1 3 3 10 8 10 4 5 3 2 0 0
0 52 22 17 4 1 2 27 61 78 77 47 22 5 0 6 6 5 3 2 0 0 0
2 34 40 54 88 52 52 52 23 4 8 17 41 160 192 209 218 23 15 11 9 7 0 0 0 0 0 1
52 38 36 46 70 233 356 551 630 361 39 86 106 111 142 28 17 18 9 2 4 13 1 1 0 0 0 1 63 46 82 56
37 16 12 22 104 290 644 518 419 326 164 23 46 61 64 27 26 1 24 0 5 6 3 3 7 11 0 0 0 78 129 110 58
31 66 96 93 28 7 13 47 52 94 163 40 52 39 17 6 27 1 2 5 2 8 6 9 9 1 0 0 12 46 26 6 9 12
1 2 5 7 3 0 7 32 6 28 20 8 1 2 1 0 21 2 7 3 7 4 6 2 9 1 2 18 2 3 2
2 4 7 6 1 0 15 0 2 2 1 1 0 6 3 1 2 0 1 1 2 4 7 3 0 9 3 0 0
16 20 7 3 0 7 0 0 3 0 0 0 1 4 1 0 1 1 0 15 11 2 0 9
20 8 3 0 0 0 0 4 0 0 0 0 3 0 0 0 2 22 22 47 43 1 8 20
14 4 1 0 0 0 0 2 1 0 1 0 2 0 0 0 31 19 61 138 202 40 25
3 1 2 11 0 0 0 0 0 0 0 11 29 64 435 242 73 15
0 0 0 0 0 17 2 14 3
0 0 0 0
0

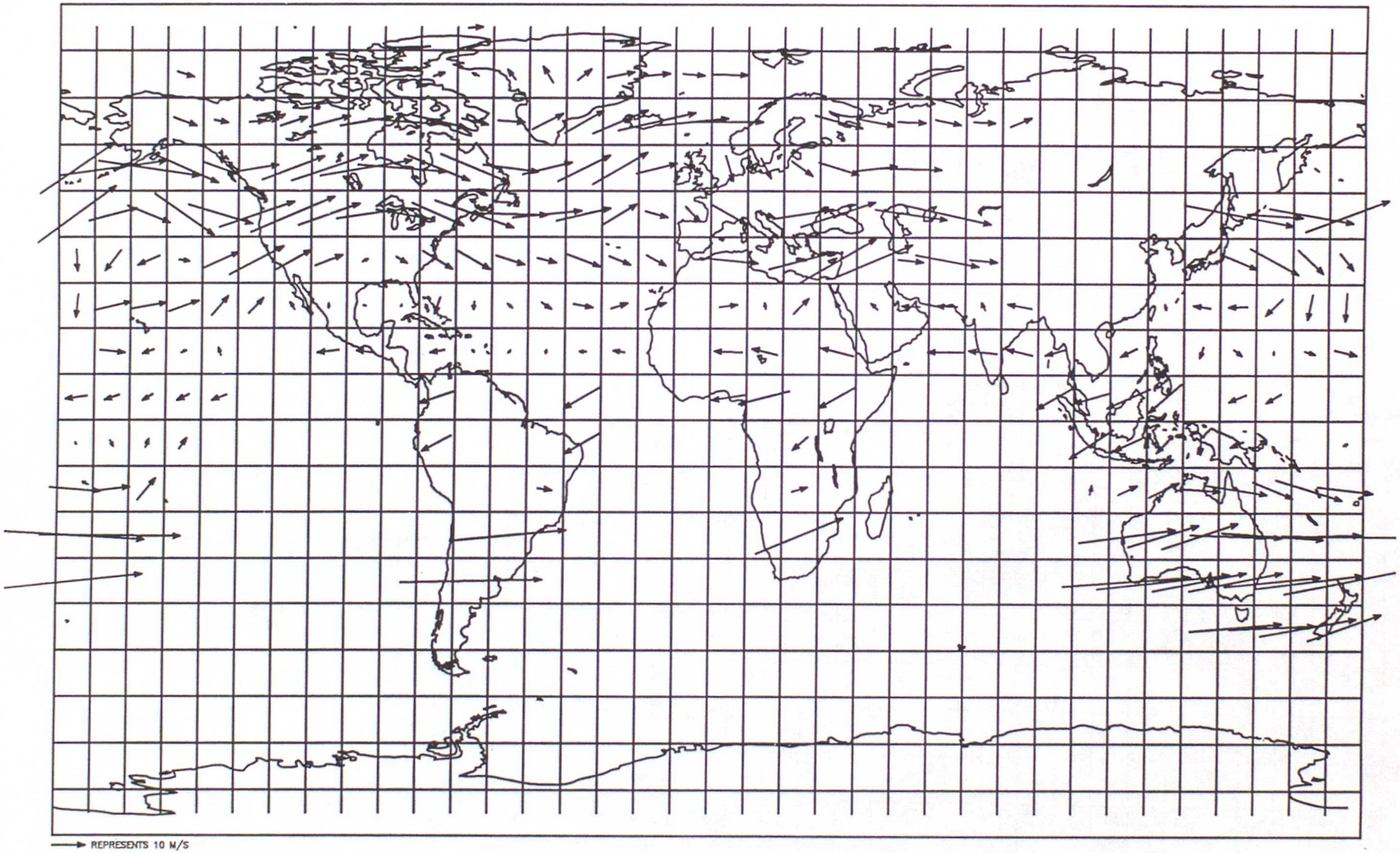
AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA

FIGURE 4

AUGUST 1995

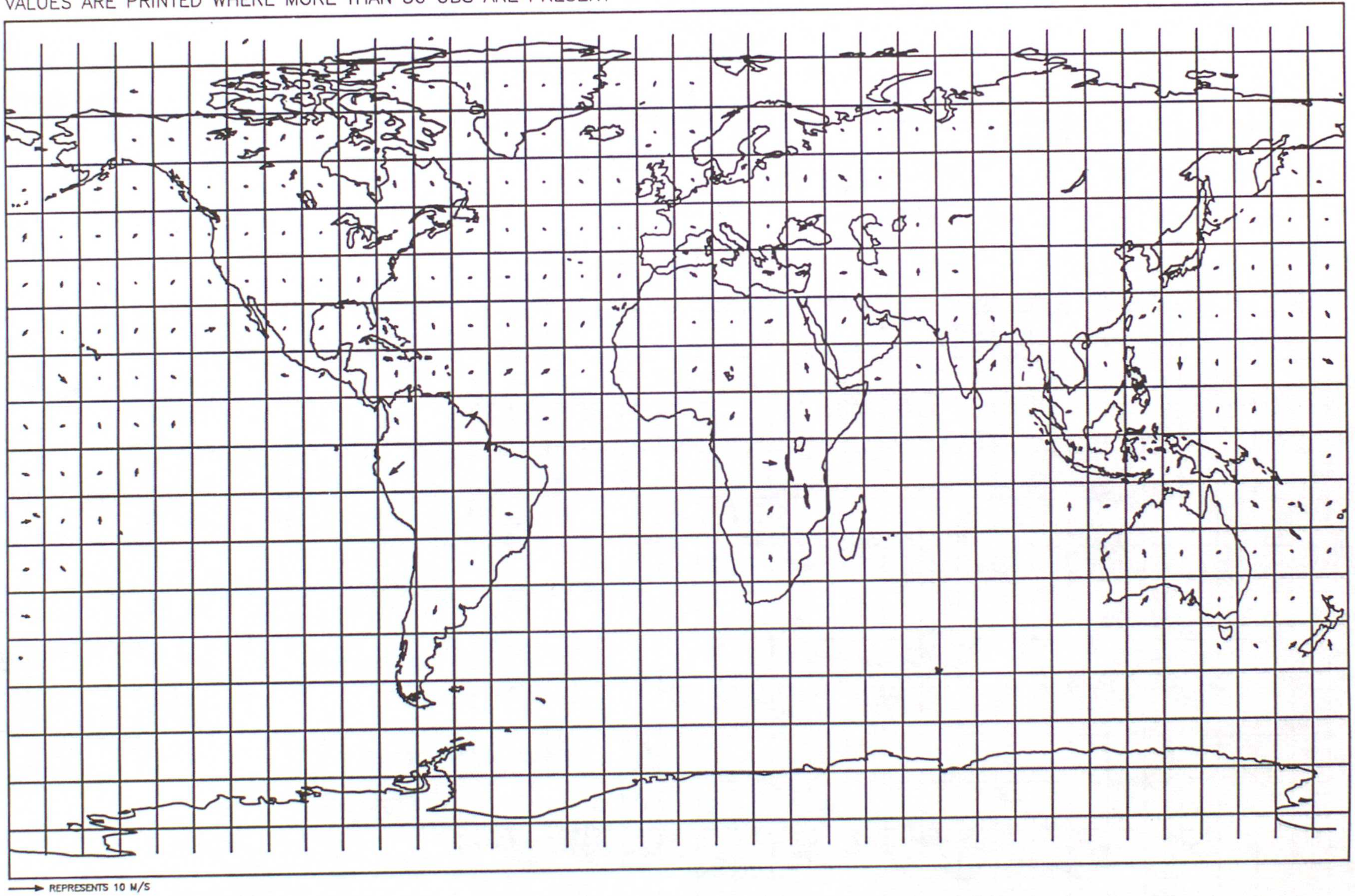
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

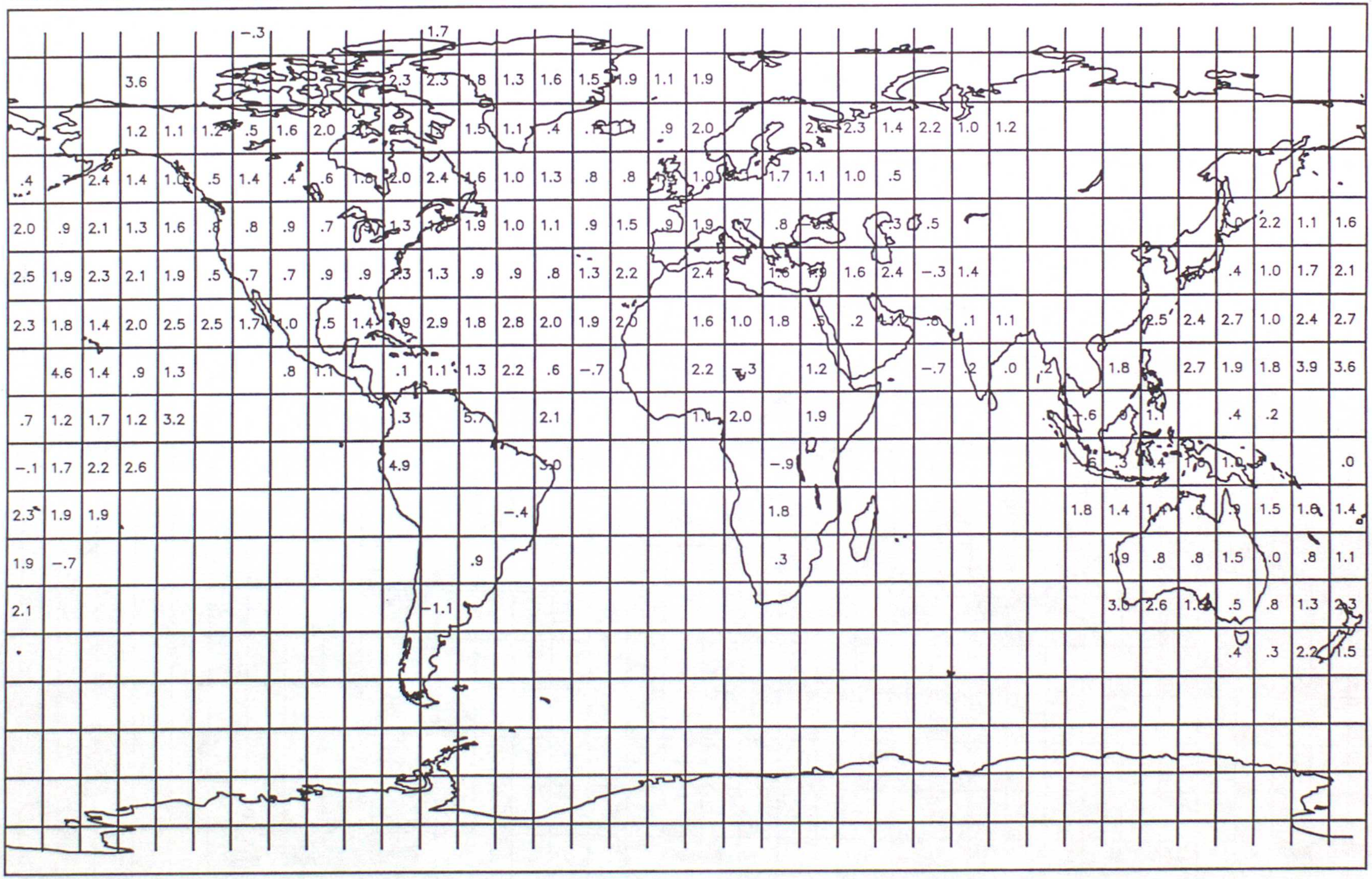


AIRCRAFT MEAN O–B WINDS BETWEEN 70 AND 500 HPA
AUGUST 1995
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 5



AIRCRAFT : MEAN O–B SPEEDS (M/S) BETWEEN 70 AND 500 HPA FIGURE 6
AUGUST 1995
OBSERVATIONS WITH O–B VECTOR DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT


–.3 1.7
3.6 2.3 2.3 .8 1.3 1.6 1.5 1.9 1.1 1.9
1.2 1.1 1.2 .5 1.6 2.0 1.5 1.1 .4 .9 2.0 2.6 2.3 1.4 2.2 1.0 1.2
.4 2.4 1.4 1.0 .5 1.4 .4 .6 2.0 2.4 1.6 1.0 1.3 .8 .8 1.0 1.7 1.1 1.0 .5
2.0 .9 2.1 1.3 1.6 .8 .8 .9 .7 1.3 1.9 1.0 1.1 .9 1.5 .9 1.9 .8 .3 .5 2.2 1.1 1.6
2.5 1.9 2.3 2.1 1.9 .5 .7 .7 .9 .9 1.3 1.3 .9 .9 .8 1.3 2.2 2.4 1.6 2.4 –.3 1.4 .4 1.0 1.7 2.1
2.3 1.8 1.4 2.0 2.5 2.5 1.7 1.0 1.5 1.4 1.9 2.9 1.8 2.8 2.0 1.9 2.0 1.6 1.0 1.8 .5 .2 .1 1.1 2.5 2.4 2.7 1.0 2.4 2.7
4.6 1.4 .9 1.3 .8 1.1 .1 1.1 1.3 2.2 .6 –.7 2.2 .3 1.2 –.7 .2 .0 .2 1.8 2.7 1.9 1.8 3.9 3.6
.7 1.2 1.7 1.2 3.2 .3 5.7 2.1 1.1 2.0 1.9 –.6 1.1 .4 .2
–.1 1.7 2.2 2.6 4.9 3.0 –.9 .3 .4 1.0 .0
2.3 1.9 1.9 –.4 1.8 1.8 1.4 1.4 .6 .9 1.5 1.6 1.4
1.9 –.7 .9 .3 1.9 .8 .8 1.5 .0 .8 1.1
2.1 –1.1 3.0 2.6 1.6 .5 .8 1.3 2.3
.4 .3 2.2 1.5

AIRCRAFT : RMS O–B VECTOR (M/S) BETWEEN 70 AND 500 HPA FIGURE 7
AUGUST 1995
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT

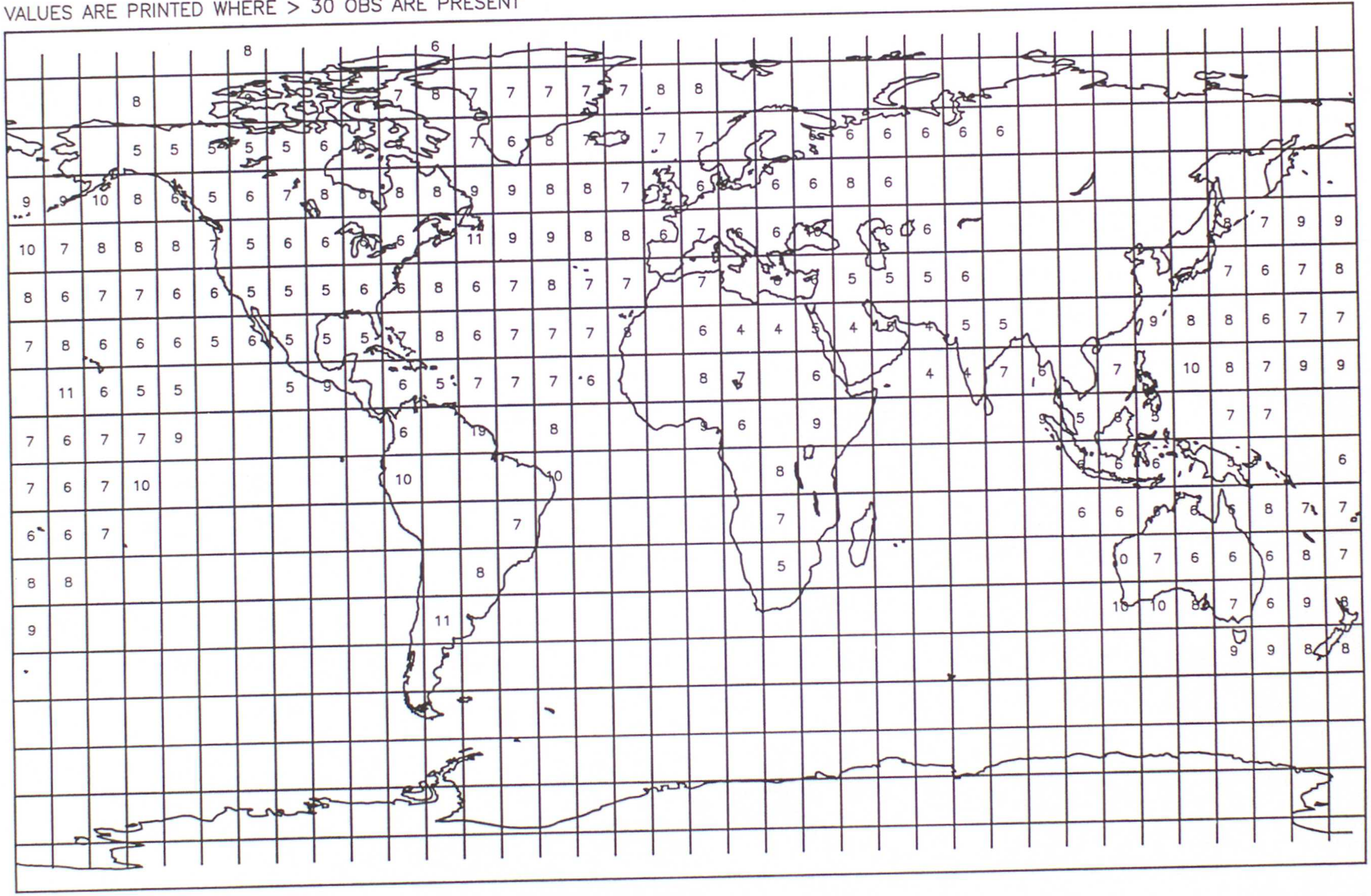

8 6
8 7 8 7 7 7 7 7 7 8 8
5 5 5 5 5 6 7 6 8 7 7 7 6 6 6 6 6
9 9 10 8 6 5 6 7 8 8 8 8 9 9 8 8 7 6 6 6 8 6
8 7 9 9
10 7 8 8 8 7 5 6 6 6 11 9 9 8 8 6 7 6 6 6 6 6
8 6 7 7 6 6 5 5 5 6 6 8 6 7 8 7 7 7 6 5 5 5 6 7 6 7 8
7 8 6 6 6 5 6 5 5 5 7 8 6 7 7 7 8 6 4 4 5 4 8 4 5 5 9 8 8 6 7 7
11 6 5 5 5 9 6 5 7 7 7 6 8 7 6 4 4 7 6 7 10 8 7 9 9
7 6 7 7 9 6 19 8 9 6 9 9 5 8 5 7 7
7 6 7 10 10 10 8 6 6 6
6 6 7 7 7 6 6 6 6 8 7 7
8 8 8 5 0 7 6 6 6 8 7
9 11 10 10 8 7 6 9 8
9 9 8 8

TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 30.0 hPa
Element monitored		:GEOPOTENTIAL HEIGHT IN metres
Parameters monitored		
	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.1	
SELECTION CRITERIA	:≥ 3 levels with ≥ 10 observations and ≥ 100 m weighted RMS.	

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
25399	00	Z	250	66/-170	14	0	41.9	80.2	90.5	5
26258	00	Z	250	58/ 28	12	7	35.8	159.1	163.1	9
37018	12	Z	70	44/ 39	14	0	21.3	169.9	171.3	7
41594	00	Z	400	32/ 73	19	2	23.9	-85.3	88.6	8
42027	00	Z	500	34/ 75	22	0	35.2	-41.3	54.3	7
42101	00	Z	700	30/ 76	24	0	24.1	-52.2	57.5	12
42101	12	Z	100	30/ 76	13	0	125.6	96.5	158.4	11
42314	00	Z	200	27/ 95	16	0	86.8	-11.8	87.6	4
42314	12	Z	150	27/ 95	14	0	116.0	15.4	117.0	5
42339	00	Z	50	26/ 73	11	0	189.2	-133.9	231.8	10
42361	00	Z	30	26/ 78	15	0	195.2	112.1	225.1	7
42361	12	Z	100	26/ 78	17	1	117.2	-69.3	136.2	7
42369	00	Z	200	27/ 81	18	3	100.4	-36.4	106.8	8
42369	12	Z	70	27/ 81	11	0	135.5	121.9	182.3	8
42379	00	Z	250	27/ 83	22	3	103.0	-13.3	103.9	9
42379	12	Z	100	27/ 83	23	2	153.8	34.4	157.6	10
42397	00	Z	850	27/ 88	22	0	18.0	-30.2	35.1	7
42397	12	Z	200	27/ 88	13	1	92.9	-59.5	110.3	9
42410	00	Z	30	26/ 92	17	0	116.3	162.4	199.7	6
42410	12	Z	50	26/ 92	13	0	135.8	89.5	162.6	7
42647	12	Z	50	23/ 73	10	0	121.4	157.1	198.6	4
42701	00	Z	150	23/ 85	15	3	72.9	-146.3	163.4	7
42724	00	Z	1000	24/ 91	5	0	26.0	-28.2	38.4	6
42867	00	Z	50	21/ 79	17	0	150.4	-17.6	151.5	6
42971	00	Z	200	20/ 86	25	0	78.4	-46.0	90.9	4
43003	12	Z	200	19/ 73	26	1	68.1	56.7	88.6	4
43014	00	Z	100	20/ 75	14	0	112.7	-4.0	112.8	4
43128	00	Z	50	17/ 78	18	0	173.1	-13.6	173.6	5
43128	12	Z	50	17/ 78	13	0	124.9	64.2	140.4	5
43150	00	Z	300	18/ 83	26	1	67.9	-26.2	72.8	6
43150	12	Z	400	18/ 83	23	1	57.1	-48.4	74.8	8
43185	00	Z	300	16/ 81	25	0	51.9	-52.1	73.5	6
43185	12	Z	50	16/ 81	11	1	113.0	210.7	239.1	9
43192	00	Z	70	15/ 74	10	0	140.2	-78.6	160.7	7
43192	12	Z	100	15/ 74	14	1	156.4	-33.1	159.9	10
43279	00	Z	150	13/ 80	23	0	103.6	-40.2	111.1	6
43279	12	Z	100	13/ 80	26	0	113.8	-74.1	135.8	4
43285	00	Z	150	13/ 75	19	1	112.6	-72.5	134.0	9
43285	12	Z	50	13/ 75	12	2	103.0	177.5	205.2	5
43346	00	Z	150	11/ 80	24	1	102.7	-93.8	139.1	6
43346	12	Z	150	11/ 80	26	1	96.9	-70.2	119.6	4
43353	00	Z	100	10/ 76	14	1	127.9	-68.4	145.0	4
43353	12	Z	150	10/ 76	13	0	90.2	-41.6	99.3	5
43369	00	Z	100	8/ 73	18	1	82.5	-121.7	147.0	6
43369	12	Z	50	8/ 73	16	0	171.0	55.1	179.6	6
43371	00	Z	50	8/ 77	13	0	76.9	-248.8	260.4	8
44373	12	Z	200	44/ 104	8	2	38.7	177.2	181.4	4
50527	12	Z	70	49/ 120	28	0	56.6	138.6	149.8	7
50953	00	Z	30	46/ 127	27	0	45.3	166.6	172.7	6
51463	12	Z	100	44/ 88	31	0	35.1	118.0	123.1	5
52203	12	Z	70	43/ 94	27	0	42.2	112.8	120.4	4
52267	12	Z	30	42/ 101	25	0	65.9	182.2	193.7	5
54135	00	Z	70	44/ 122	28	0	52.7	131.8	141.9	7
54135	12	Z	100	44/ 122	31	0	82.1	113.5	140.1	7
54342	12	Z	150	42/ 123	29	0	33.6	89.4	95.5	5
54497	00	Z	30	40/ 124	23	1	71.1	187.0	200.0	7
54497	12	Z	70	40/ 124	20	0	41.6	119.2	126.3	5
54823	12	Z	70	37/ 117	26	0	47.6	124.8	133.6	4

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
55591	12	Z	30	30/ 91	16	0	65.9	186.1	197.4	4
56029	12	Z	100	33/ 97	29	0	52.3	105.7	118.0	5
56080	12	Z	100	35/ 103	28	0	38.9	136.1	141.5	7
56146	12	Z	30	32/ 100	14	0	56.4	205.6	213.2	6
56294	12	Z	70	31/ 104	24	0	42.7	130.9	137.7	4
56691	00	Z	100	27/ 104	28	0	42.6	109.6	117.6	4
56691	12	Z	100	27/ 104	26	1	42.2	126.5	133.3	6
56739	12	Z	100	25/ 98	28	0	26.7	119.3	122.2	5
56778	12	Z	50	25/ 103	19	0	57.9	127.7	140.2	5
57083	00	Z	150	35/ 114	27	0	52.0	78.0	93.8	5
57178	00	Z	100	33/ 113	26	0	31.1	109.0	113.4	5
57516	00	Z	100	30/ 106	29	0	41.8	129.5	136.1	4
57516	12	Z	100	30/ 106	30	0	38.6	126.3	132.1	5
57679	00	Z	100	28/ 113	29	0	50.4	128.2	137.7	6
57679	12	Z	100	28/ 113	23	1	74.9	107.8	131.3	6
57749	00	Z	100	28/ 110	27	0	36.3	135.3	140.1	7
57749	12	Z	70	28/ 110	24	0	38.7	142.3	147.5	6
57957	00	Z	100	25/ 110	28	0	47.5	122.5	131.4	4
57957	12	Z	70	25/ 110	27	0	53.7	143.7	153.4	5
58203	00	Z	30	33/ 116	24	1	93.8	150.0	176.9	5
58203	12	Z	200	33/ 116	28	0	53.3	70.8	88.6	7
58424	12	Z	70	31/ 117	27	0	37.3	124.0	129.5	5
58633	00	Z	30	29/ 119	27	0	54.5	178.1	186.3	4
58665	00	Z	30	29/ 121	21	0	58.1	186.1	195.0	4
58847	00	Z	100	26/ 119	26	0	34.4	107.3	112.7	5
62306	00	Z	70	31/ 27	13	1	55.4	204.6	212.0	5
62306	12	Z	50	31/ 27	4	15	4.1	390.7	390.8	9
62378	00	Z	70	30/ 31	17	2	57.8	163.5	173.4	5
62378	12	Z	70	30/ 31	6	4	225.1	205.8	305.0	8
63450	12	Z	700	9/ 39	19	1	7.2	50.4	50.9	6
71203	00	Z	250	50/ -12	16	15	145.3	-69.6	161.1	10
71203	12	Z	1000	50/ -12	21	10	36.3	-50.7	62.3	10
71603	00	Z	50	44/ -66	21	0	138.9	-75.7	158.2	6
71603	12	Z	100	44/ -66	29	0	103.8	-80.2	131.2	7
74455	00	Z	200	48/ -91	29	2	60.1	150.7	162.2	9
74455	12	Z	200	48/ -91	29	1	59.9	149.3	160.9	7
82332	12	Z	30	-3/ -60	16	0	47.7	202.0	207.6	7
89009	00	Z	400	-90/ 0	19	0	71.7	24.7	75.8	5
89050	00	Z	200	-62/ -59	20	11	60.5	143.4	155.7	10
96163	00	Z	100	-1/ 100	10	0	126.6	-42.9	133.6	4
97014	00	Z	150	2/ 125	24	0	78.1	46.6	91.0	4

AVAILABILITY – TEMP – 500 HPA GEOPOTENTIAL – AUGUST 1995

FIGURE 8

ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1407

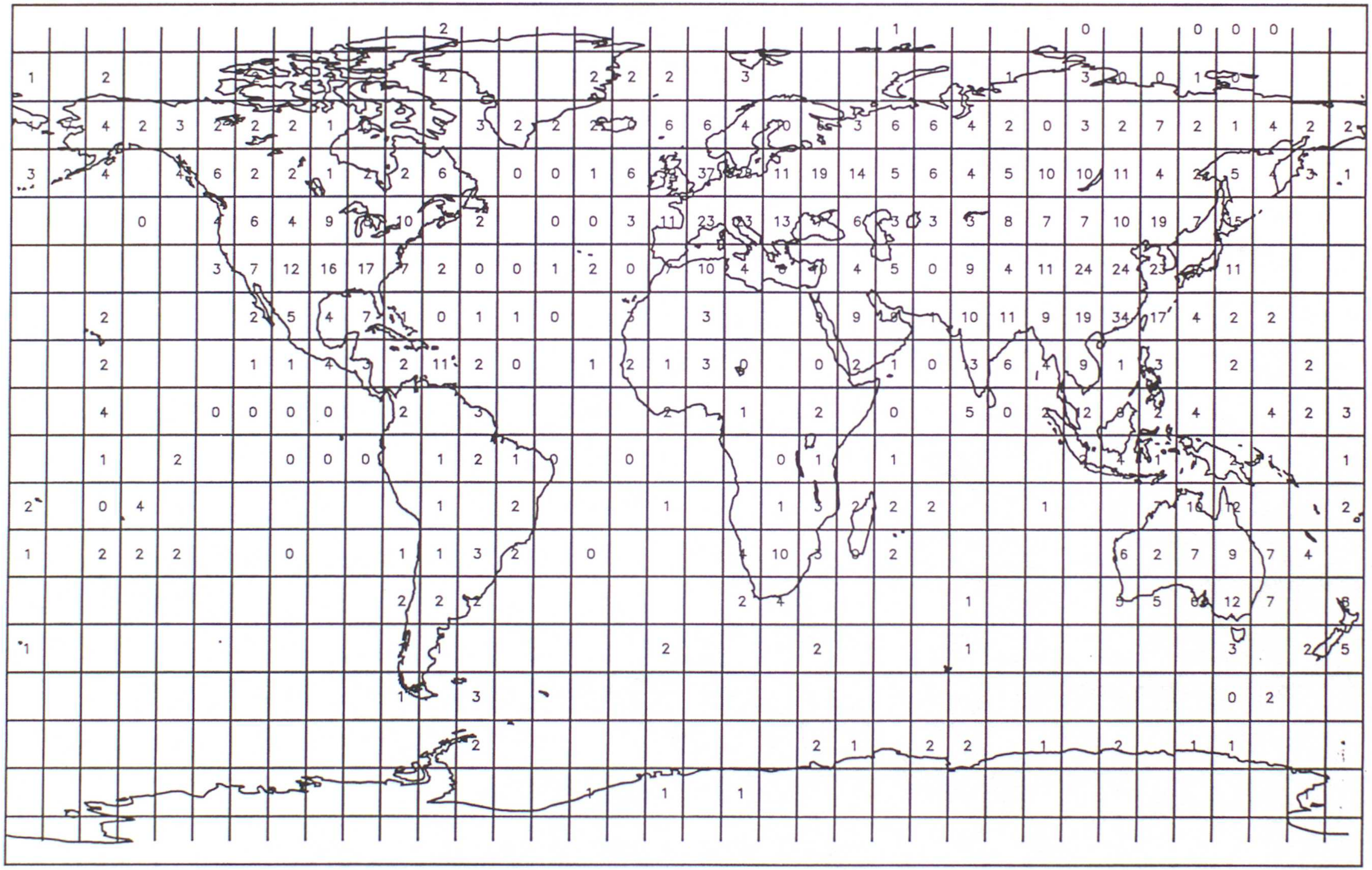

2 1 0 0 0 0
1 2 2 2 2 2 3 2 1 3 0 0 1 0
1 4 2 3 2 2 2 1 3 2 2 2 6 6 4 0 6 3 6 6 4 2 0 3 2 7 2 1 4 2 2
3 2 4 4 6 2 2 1 2 2 6 0 0 1 6 37 11 19 14 5 6 4 5 10 10 11 4 2 5 4 3 1
0 4 6 4 9 10 2 0 0 3 11 23 23 13 6 3 3 3 8 7 7 10 19 7 15
3 7 12 16 17 7 2 0 0 1 2 0 7 10 4 8 40 4 5 0 9 4 11 24 24 23 11
2 2 5 4 7 1 0 1 1 0 3 3 9 9 1 10 11 9 19 34 17 4 2 2
2 1 1 4 2 11 2 0 1 2 1 3 0 0 2 1 0 3 6 4 9 1 3 2 2
4 0 0 0 0 2 3 2 1 2 0 5 0 2 12 8 2 4 4 2 3
1 2 0 0 0 1 2 1 0 0 0 1 1 4 1 2 1 1
2 0 4 1 2 1 1 3 2 2 2 1 7 10 12 2
1 2 2 2 0 1 1 3 2 0 4 10 3 0 2 6 2 7 9 7 4
2 2 2 2 4 1 5 5 6 12 7 8
1 1 2 2 1 3 2 5
1 3 0 2
2 2 1 2 2 1 2 1 1
1 1 1

TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 100.0 hPa
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.2	
SELECTION CRITERIA	:$\geq$ 10 observations and $\geq$ 15 m s^{-1} RMS vector wind.	

ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
41316	00	V	100	17/ 54	10	0	50	32.8	-0.9	16.2	1
43014	00	V	100	20/ 75	12	0	8	-13.9	-7.1	18.9	1
71203	00	V	250	50/ -12	31	0	74	23.9	18.2	25.6	5
71203	12	V	250	50/ -12	30	0	83	24.7	17.5	25.5	5
74455	00	V	200	48/ -91	31	0	45	-16.4	0.2	21.2	4
74455	12	V	200	48/ -91	29	0	44	-14.3	-2.0	21.9	2

AVAILABILITY – TEMP/PILOT – 300 HPA WIND – AUGUST 1995

FIGURE 9

ALL HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

TOTAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1262

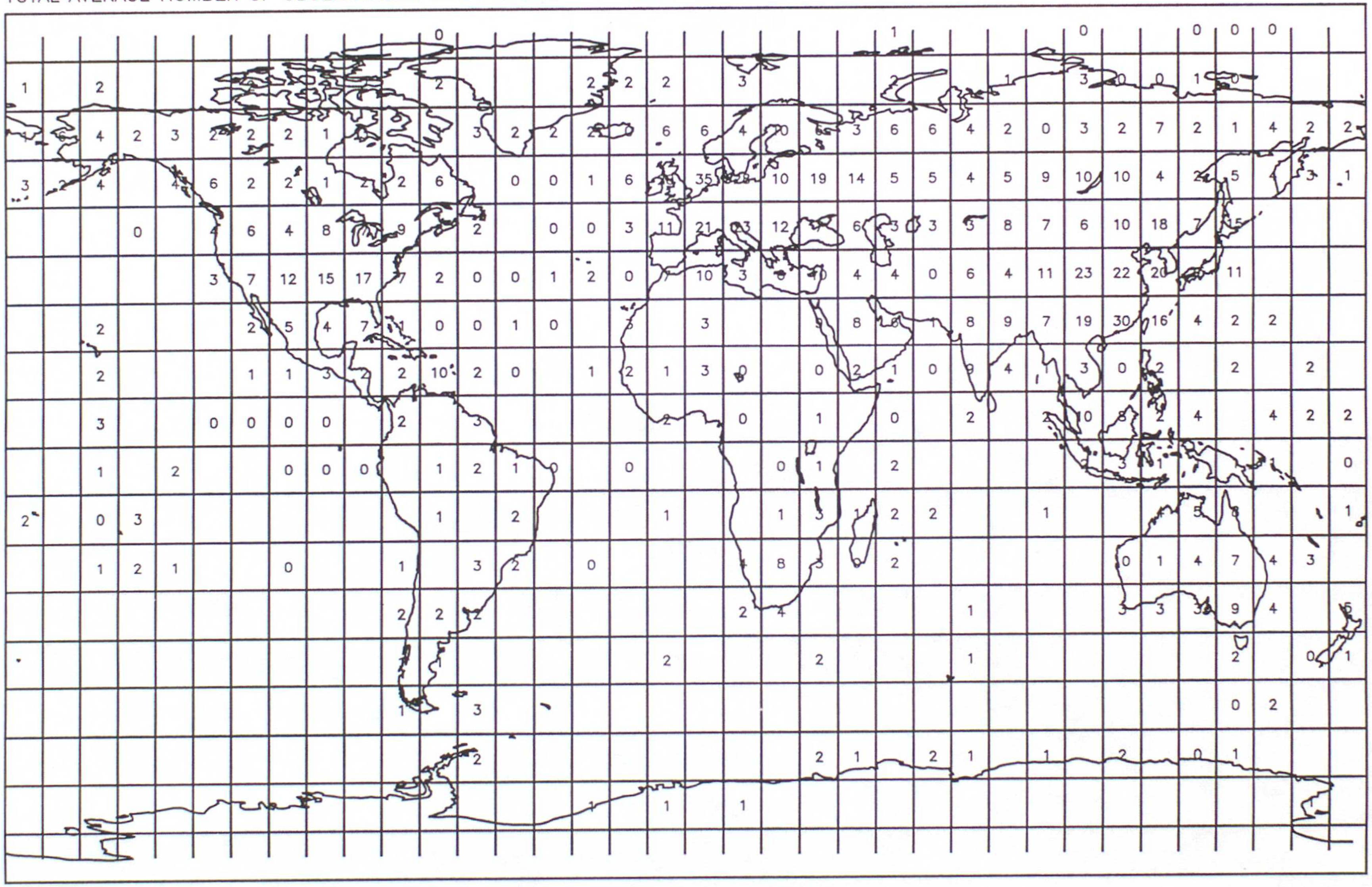

0 1 0 0 0 0
1 2 2 2 2 2 3 2 1 3 0 0 1 0
6 4 2 3 2 2 2 1 3 2 2 2 0 6 6 4 0 6 3 6 6 4 2 0 3 2 7 2 1 4 2 2
3 2 4 4 6 2 2 1 2 2 6 0 0 1 6 35 10 19 14 5 5 4 5 9 10 10 4 2 5 4 3 1
0 4 6 4 8 9 2 0 0 3 11 21 3 12 6 3 3 3 8 7 6 10 18 7 15
3 7 12 15 17 7 2 0 0 1 2 0 10 3 4 4 0 6 4 11 23 22 20 11
2 2 5 4 7 1 0 0 1 0 3 3 8 6 1 8 9 7 19 30 16 4 2 2
2 1 1 3 2 2 10 2 0 1 2 1 3 0 0 2 1 0 9 4 1 3 0 2 2 2
3 0 0 0 0 2 3 2 0 1 0 2 2 0 8 2 4 4 2 2
1 2 0 0 0 1 2 1 0 0 0 1 2 3 1 1 0
2 0 3 1 2 1 1 3 1 2 2 1 5 8 1 1
1 2 1 0 1 3 2 0 4 8 3 0 2 0 1 4 7 4 3
2 2 2 2 4 1 3 3 3 9 4 5
1 2 2 1 2 0 1
1 3 0 2
2 2 1 2 1 1 2 0 1
1 1 1 1

TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 500.0 - 150.0 hPa

Element monitored :WIND DIRECTION in degrees

Parameters monitored

:NUM OBS :Average number of observations at all levels.

:BIAS :Mean difference of observations from background values from all levels.

:MAX SPREAD :(For observation - background values) Maximum absolute difference of SD at any level from SD at all levels

:SD :SD of difference of observations from background values at all levels.

SELECTION CRITERIA :NUM OBS ≥ 5, and
ABSOLUTE BIAS ≥ 10°, with
SD < 30°, and
MAX SPREAD < 10°

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
31168	00	DD	56/ 138	21	12.9	7.6	21.4
31873	12	DD	46/ 134	21	10.1	4.1	8.6
40265	00	DD	32/ 36	23	-10.2	4.1	17.9
40430	00	DD	25/ 40	13	12.8	6.5	18.2
41024	00	DD	22/ 39	19	12.7	7.9	19.6
48565	00	DD	8/ 98	21	-10.6	6.1	24.7
53614	12	DD	38/ 106	29	-10.7	6.0	12.3
54857	00	DD	36/ 120	26	12.6	4.3	15.1
54857	12	DD	36/ 120	28	10.8	2.1	15.5
61052	00	DD	13/ 2	23	-13.5	10.0	24.3
72251	12	DD	28/ -97	19	-13.6	3.7	20.1
72293	12	DD	33/-117	20	10.1	8.6	17.5
91413	12	DD	9/ 138	15	-15.3	7.6	29.2
96315	12	DD	5/ 115	11	10.8	9.1	17.3
97724	00	DD	-4/ 128	15	10.4	8.3	21.9

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH:AUGUST, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from GOES, METEOSAT, GMS, INSAT.

Standard of comparison :Background field from Bracknell global model.

Selection Criteria :number of observations > 10.

Data Extracted :Layer:701 - 1000 hPa
401 - 700 hPa
101 - 400 hPa

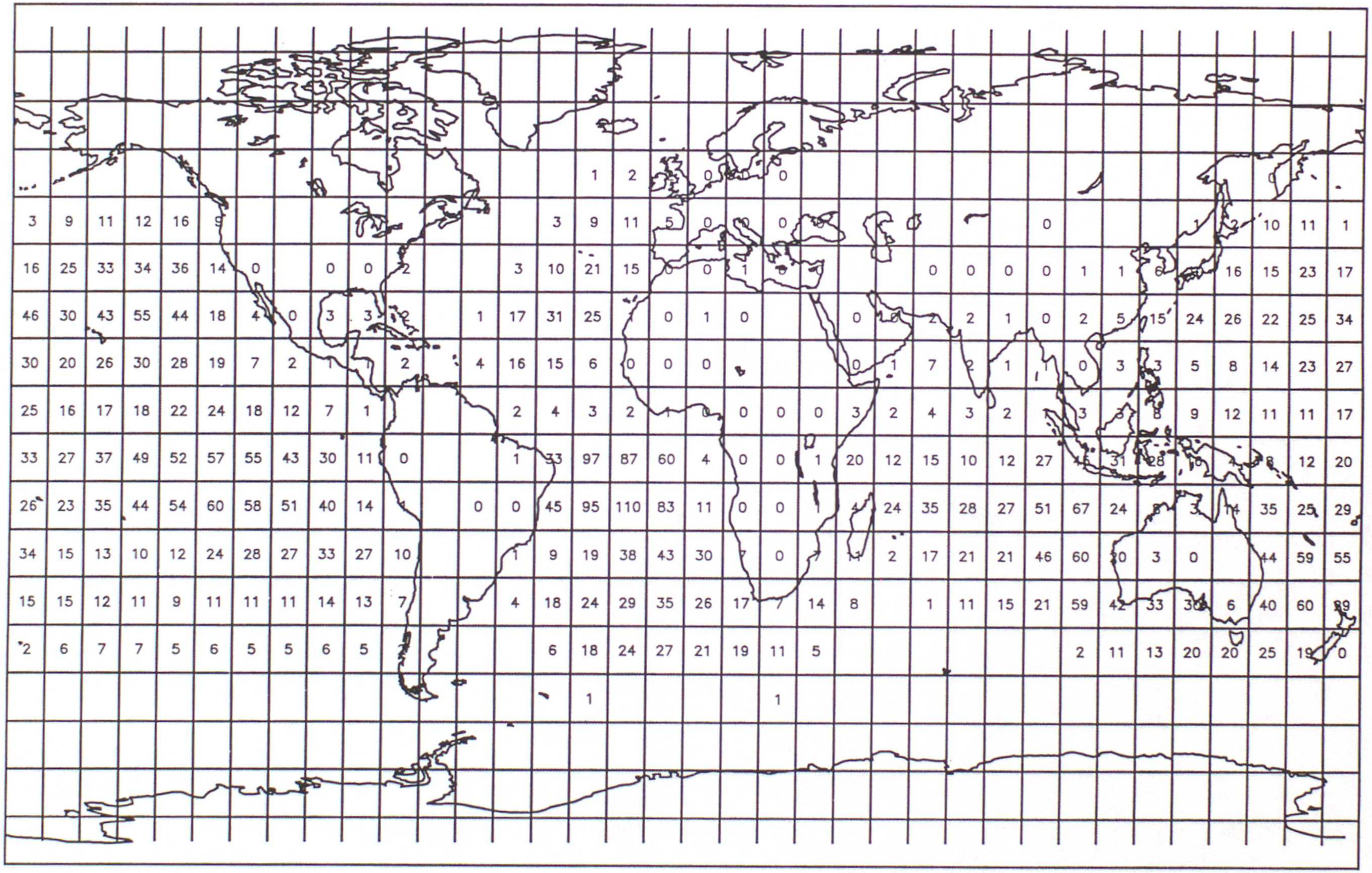
:Mean wind

:Mean observation minus background vector wind differences

:Mean observation minus background speed differences

:RMS of observation minus background vector differences

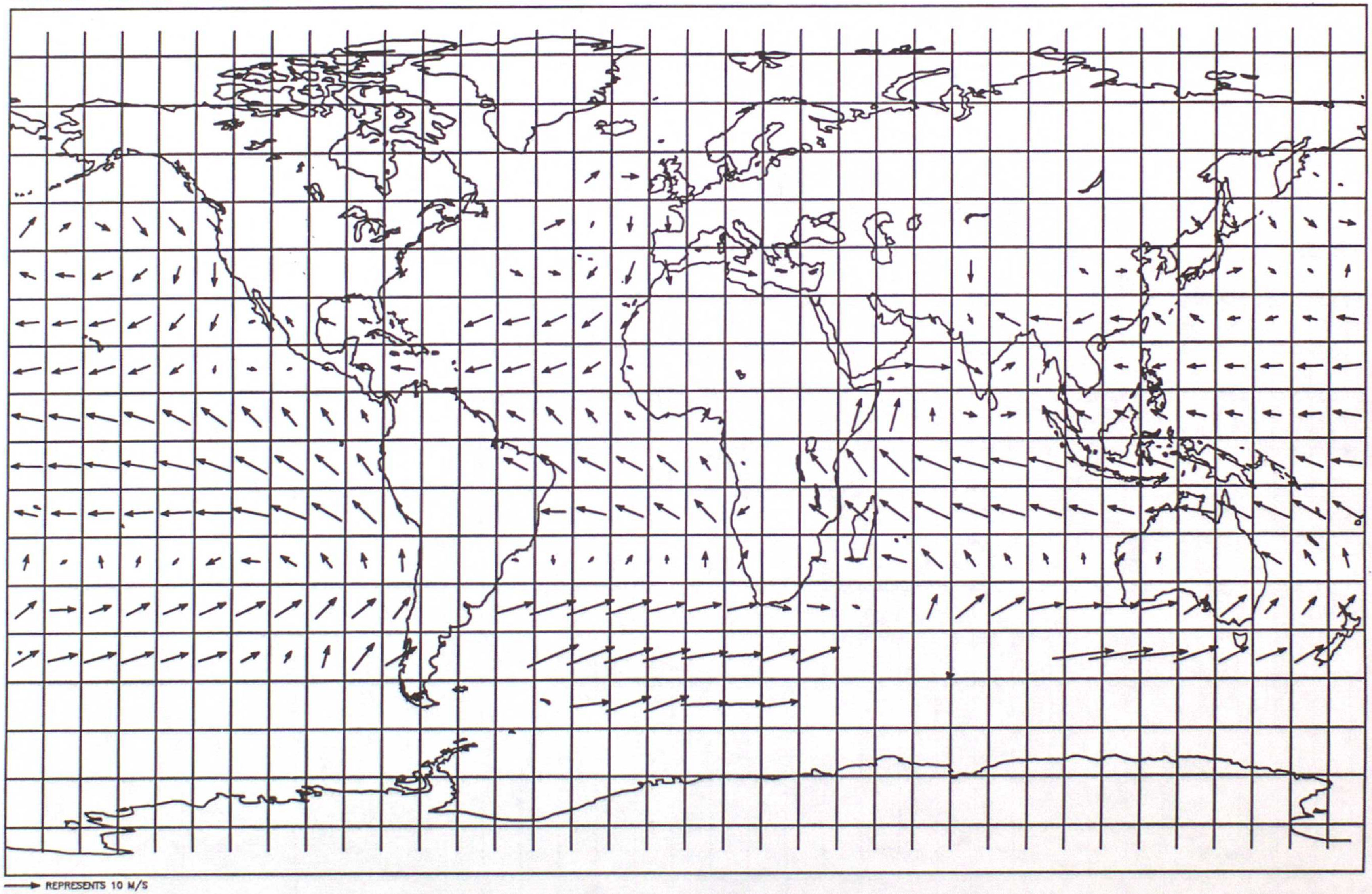
AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
AUGUST 1995



															1	2		0		0													0		
3	9	11	12	16	9									3	9	11	5	0	0	0	0						0				1	2	10	11	1
16	25	33	34	36	14	0		0	0	2			3	10	21	15	0	0	1	0	0			0	0	0	0	1	1	6		16	15	23	17
46	30	43	55	44	18	4	0	3	3	2		1	17	31	25	1	0	1	0			0	0	2	2	1	0	2	5	15	24	26	22	25	34
30	20	26	30	28	19	7	2	1	1	2		4	16	15	6	0	0	0				0	1	7	2	1	1	0	3	3	5	8	14	23	27
25	16	17	18	22	24	18	12	7	1				2	4	3	2	1	0	0	0	0	3	2	4	3	2	1	3	3	8	9	12	11	11	17
33	27	37	49	52	57	55	43	30	11	0			1	33	97	87	60	4	0	0	1	20	12	15	10	12	27	45	31	28	10	4	8	12	20
26	23	35	44	54	60	58	51	40	14	1		0	0	45	95	110	83	11	0	0	1	4	24	35	28	27	51	67	24	8	3	14	35	25	29
34	15	13	10	12	24	28	27	33	27	10			1	9	19	38	43	30	7	0	7	11	2	17	21	21	46	60	30	3	0		44	59	55
15	15	12	11	9	11	11	11	14	13	7			4	18	24	29	35	26	17	7	14	8		1	11	15	21	59	42	33	30	6	40	60	39
2	6	7	7	5	6	5	5	6	5	2				6	18	24	27	21	19	11	5							2	11	13	20	20	25	19	0
															1					1															

FIGURE 11

SATOB VECTOR MEAN WINDS BETWEEN 701–1000 HPA
AUGUST 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT


REPRESENTS 10 M/S

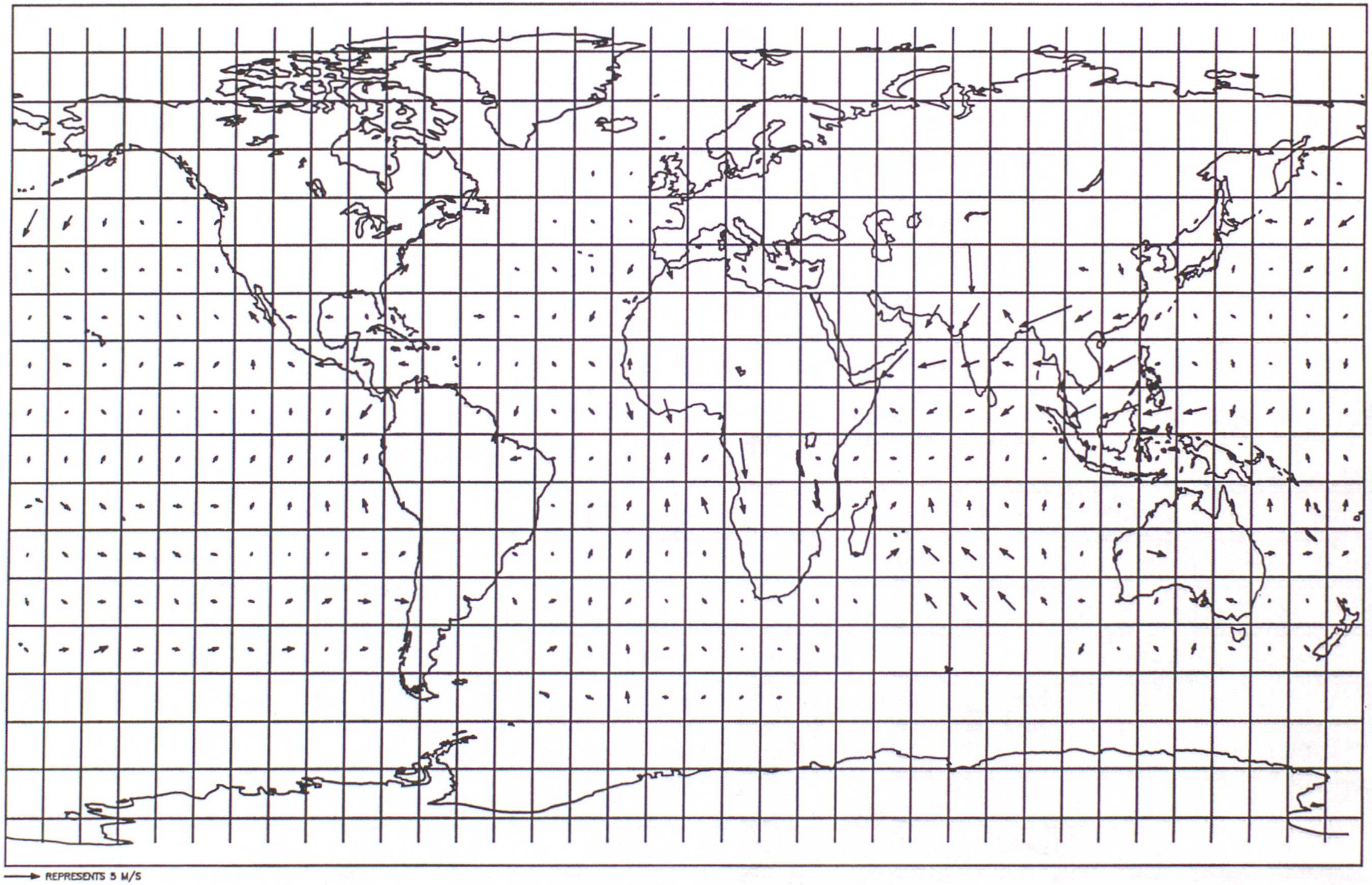
SATOB O–B VECTOR WIND DIFFERENCES BETWEEN 701–1000 HPA

FIGURE 12

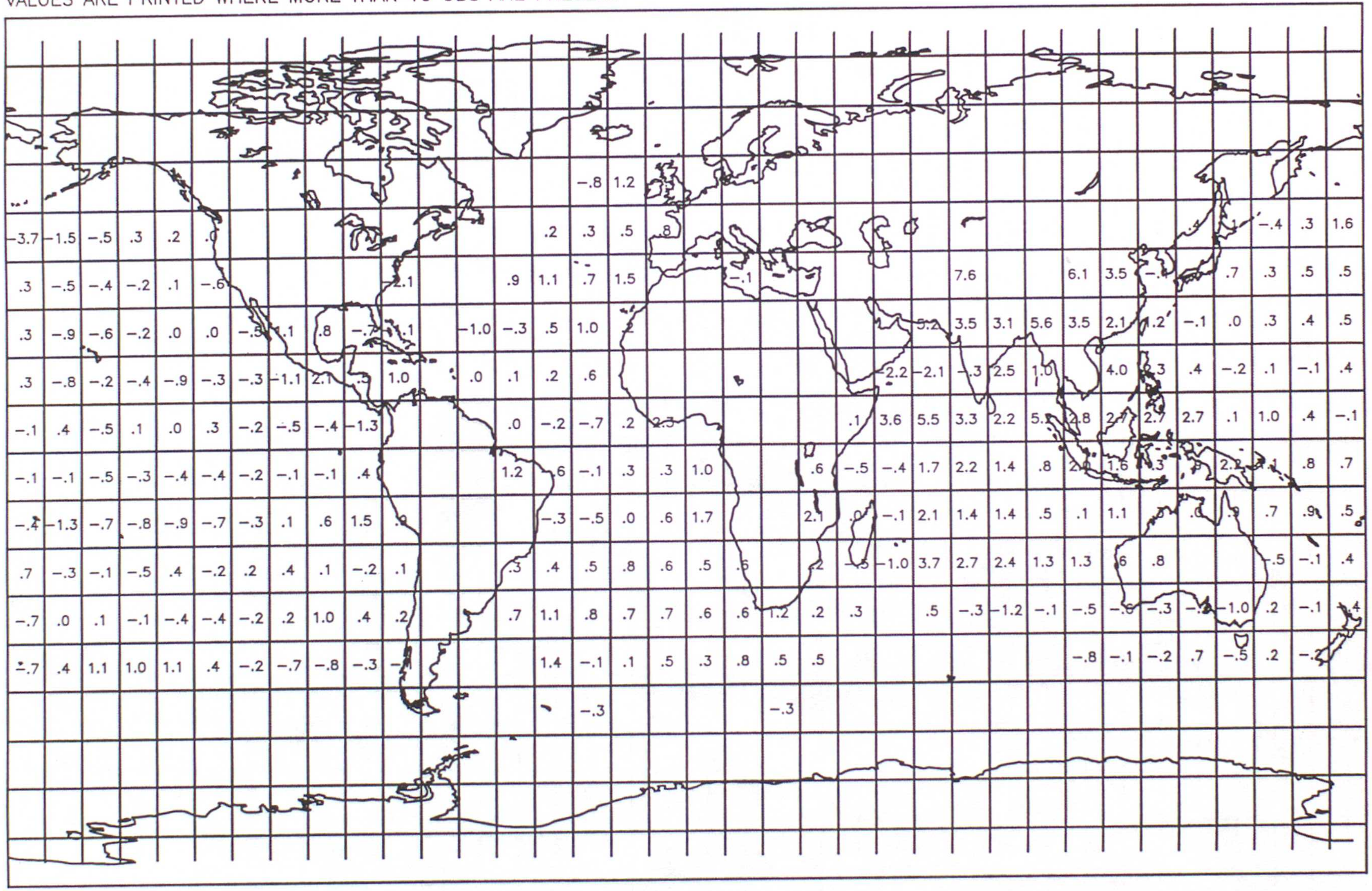
AUGUST 1995

ALL OBSERVATIONS

ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

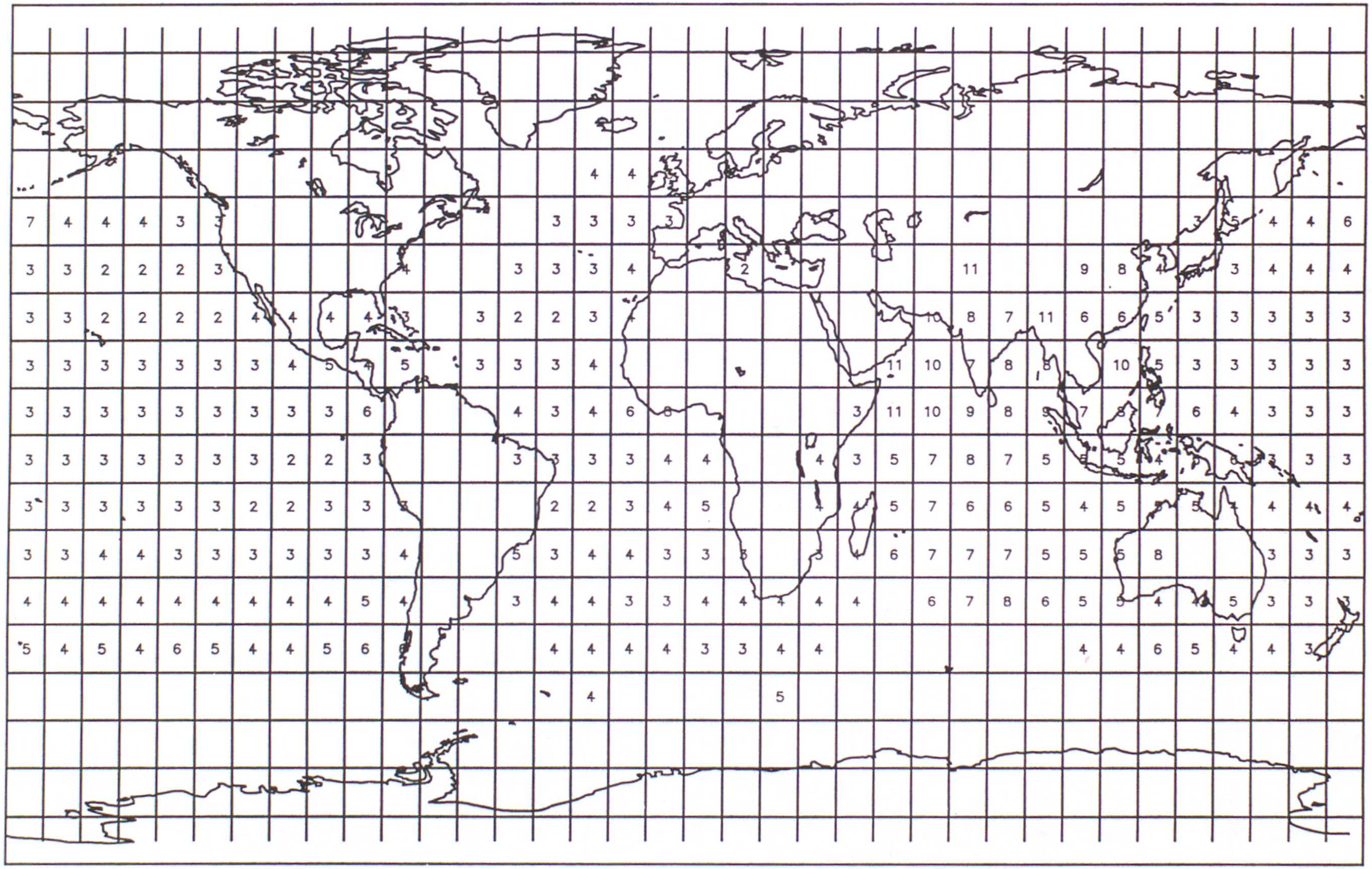


SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 13
AUGUST 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

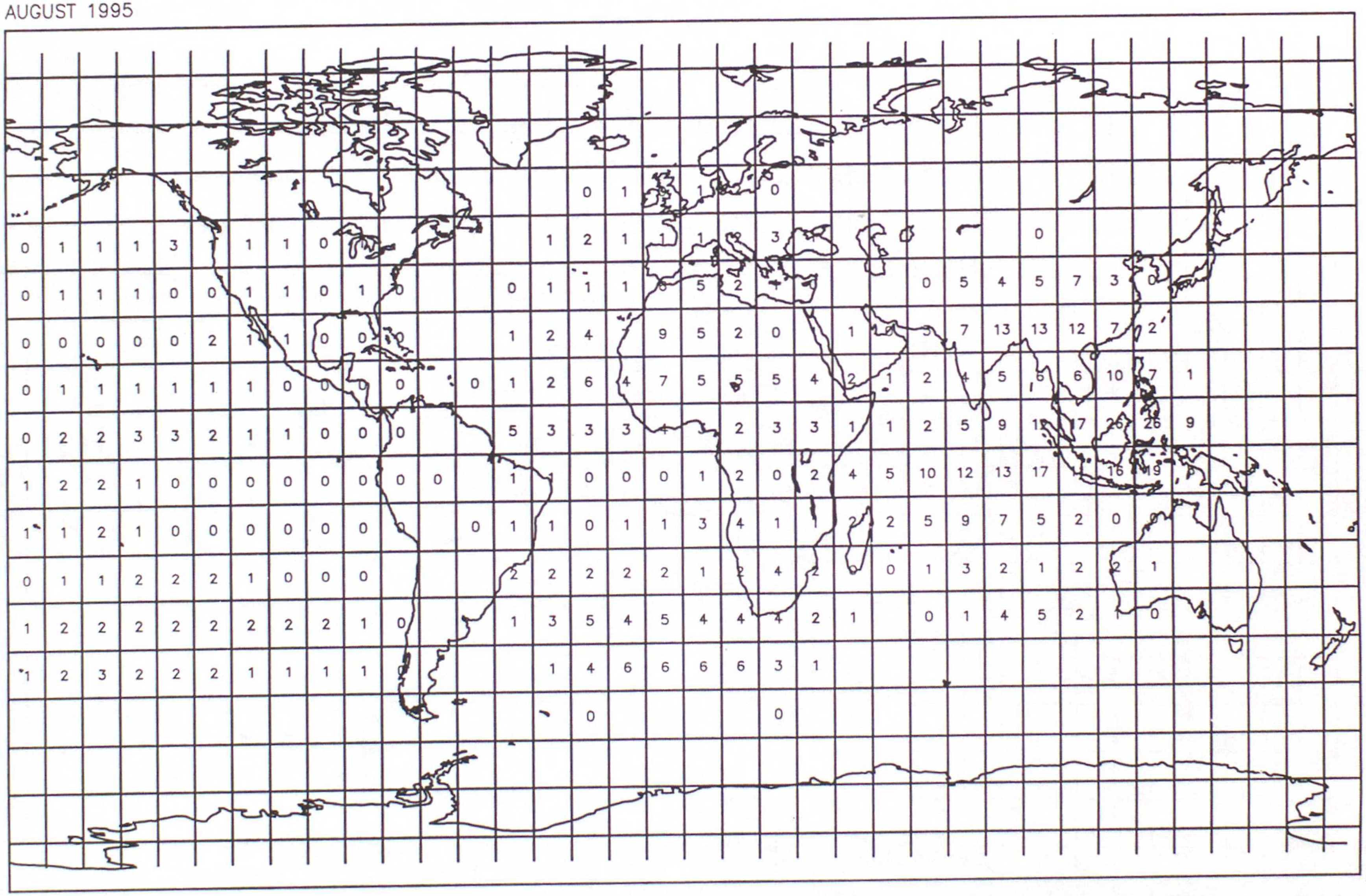


–.8 1.2
–3.7 –1.5 –.5 .3 .2 .0 .2 .3 .5 .8 –.4 .3 1.6
.3 –.5 –.4 –.2 .1 –.6 2.1 .9 1.1 .7 1.5 –.1 7.6 6.1 3.5 –.4 .7 .3 .5 .5
.3 –.9 –.6 –.2 .0 .0 –.5 .1 .8 –.7 .1 –1.0 –.3 .5 1.0 .2 5.2 3.5 3.1 5.6 3.5 2.1 1.2 –.1 .0 .3 .4 .5
.3 –.8 –.2 –.4 –.9 –.3 –.3 –1.1 2.1 .5 1.0 .0 .1 .2 .6 –2.2 –2.1 –.3 2.5 1.0 4.0 .3 .4 –.2 .1 –.1 .4
–.1 .4 –.5 .1 .0 .3 –.2 –.5 –.4 –1.3 .0 –.2 –.7 .2 2.3 .1 3.6 5.5 3.3 2.2 5.5 2.8 2.7 2.7 2.7 .1 1.0 .4 –.1
–.1 –.1 –.5 –.3 –.4 –.4 –.2 –.1 –.1 .4 1.2 .6 –.1 .3 .3 1.0 .6 –.5 –.4 1.7 2.2 1.4 .8 2.0 1.6 1.3 .9 2.2 .1 .8 .7
–.4 –1.3 –.7 –.8 –.9 –.7 –.3 .1 .6 1.5 .9 –.3 –.5 .0 .6 1.7 2.1 .0 –.1 2.1 1.4 1.4 .5 .1 1.1 .3 .0 .9 .7 .9 .5
.7 –.3 –.1 –.5 .4 –.2 .2 .4 .1 –.2 .1 .3 .4 .5 .8 .6 .5 .5 .2 –.5 –1.0 3.7 2.7 2.4 1.3 1.3 .6 .8 .5 –.1 .4
–.7 .0 .1 –.1 –.4 –.4 –.2 .2 1.0 .4 .2 .7 1.1 .8 .7 .7 .6 .6 1.2 .2 .3 .5 –.3 –1.2 –.1 –.5 –.6 –.3 –.3 –1.0 .2 –.1 .4
–.7 .4 1.1 1.0 1.1 .4 –.2 –.7 –.8 –.3 –.1 1.4 –.1 .1 .5 .3 .8 .5 .5 –.8 –.1 –.2 .7 –.5 .2 –.2
–.3 –.3

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 14
AUGUST 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

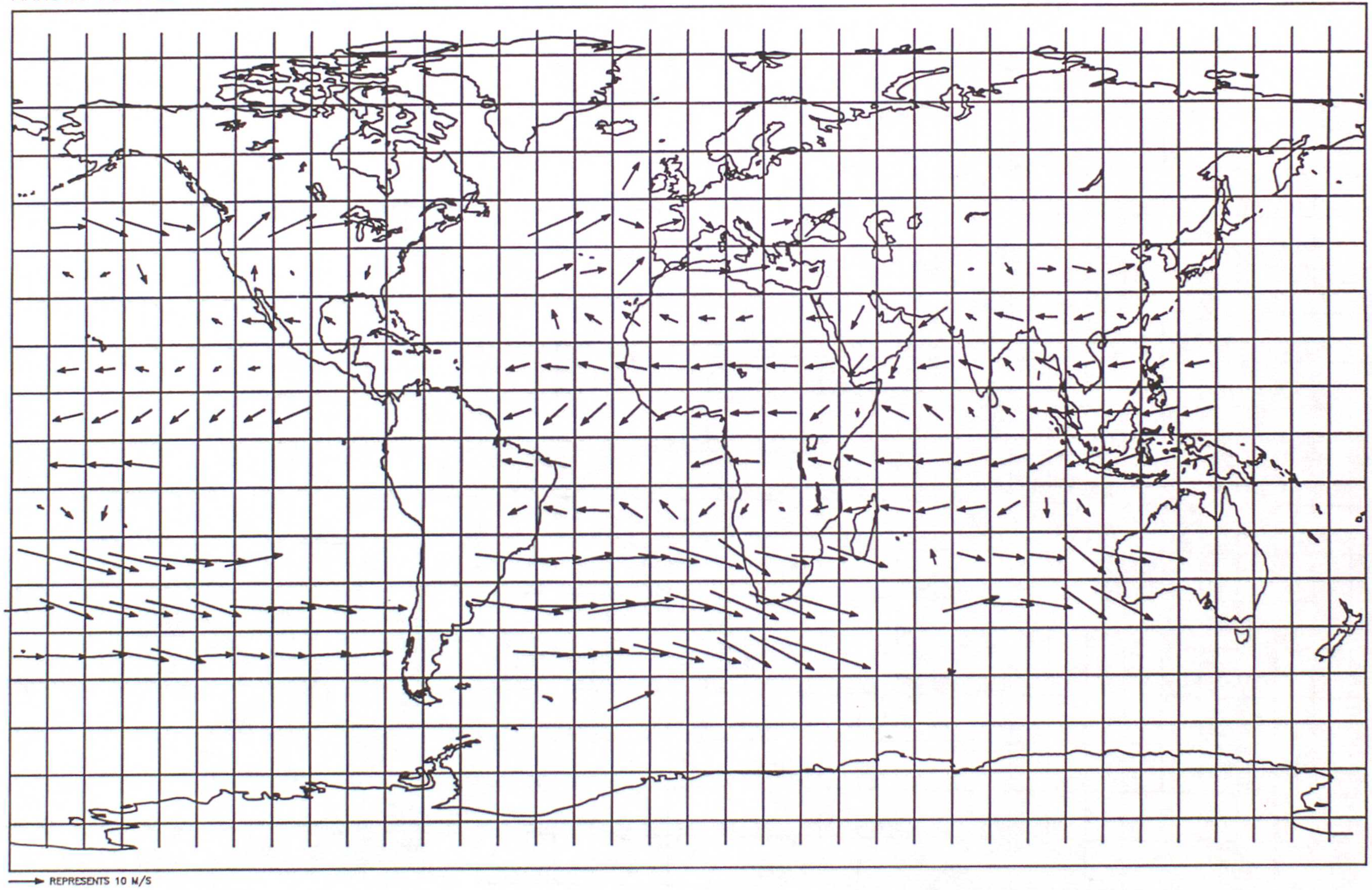


AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15
AUGUST 1995


0 1 1 1 0
0 1 1 1 3 1 1 1 0 1 2 1 1 1 2 3 0
0 1 1 1 0 0 1 1 0 1 0 0 1 1 1 6 5 2 4 0 0 5 4 5 7 3 0
0 0 0 0 0 2 1 1 0 0 0 1 2 4 7 9 5 2 0 1 0 3 7 13 13 12 7 2
0 1 1 1 1 1 1 0 0 0 0 0 1 2 6 4 7 5 5 5 4 2 1 2 4 5 6 6 10 7 1
0 2 2 3 3 2 1 1 0 0 0 5 3 3 3 4 2 3 3 1 1 2 5 9 15 17 26 26 9
1 2 2 1 0 0 0 0 0 0 0 0 1 1 0 0 0 1 2 0 2 4 5 10 12 13 17 1 16 19
1 1 2 1 0 0 0 0 0 0 0 1 1 0 1 1 3 4 1 1 2 2 5 9 7 5 2 0 0
0 1 1 2 2 2 1 0 0 0 2 2 2 2 2 1 2 4 2 0 0 1 3 2 1 2 2 1
1 2 2 2 2 2 2 2 2 1 0 1 3 5 4 5 4 4 4 2 1 0 1 4 5 2 1 0
1 2 3 2 2 2 1 1 1 1 0 1 4 6 6 6 6 3 1
0 0

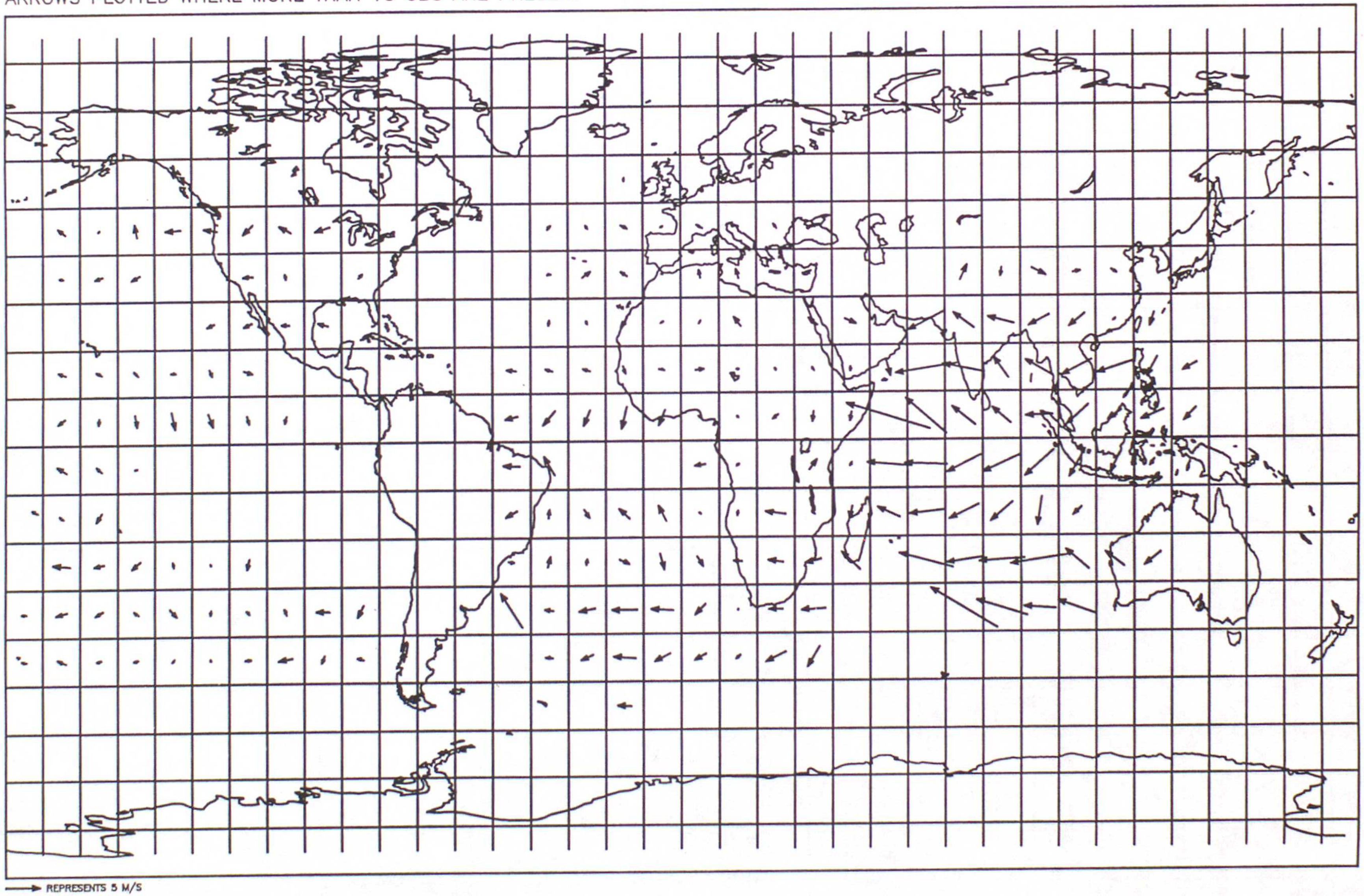
SATOB VECTOR MEAN WINDS BETWEEN 401–700 HPA
AUGUST 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 16

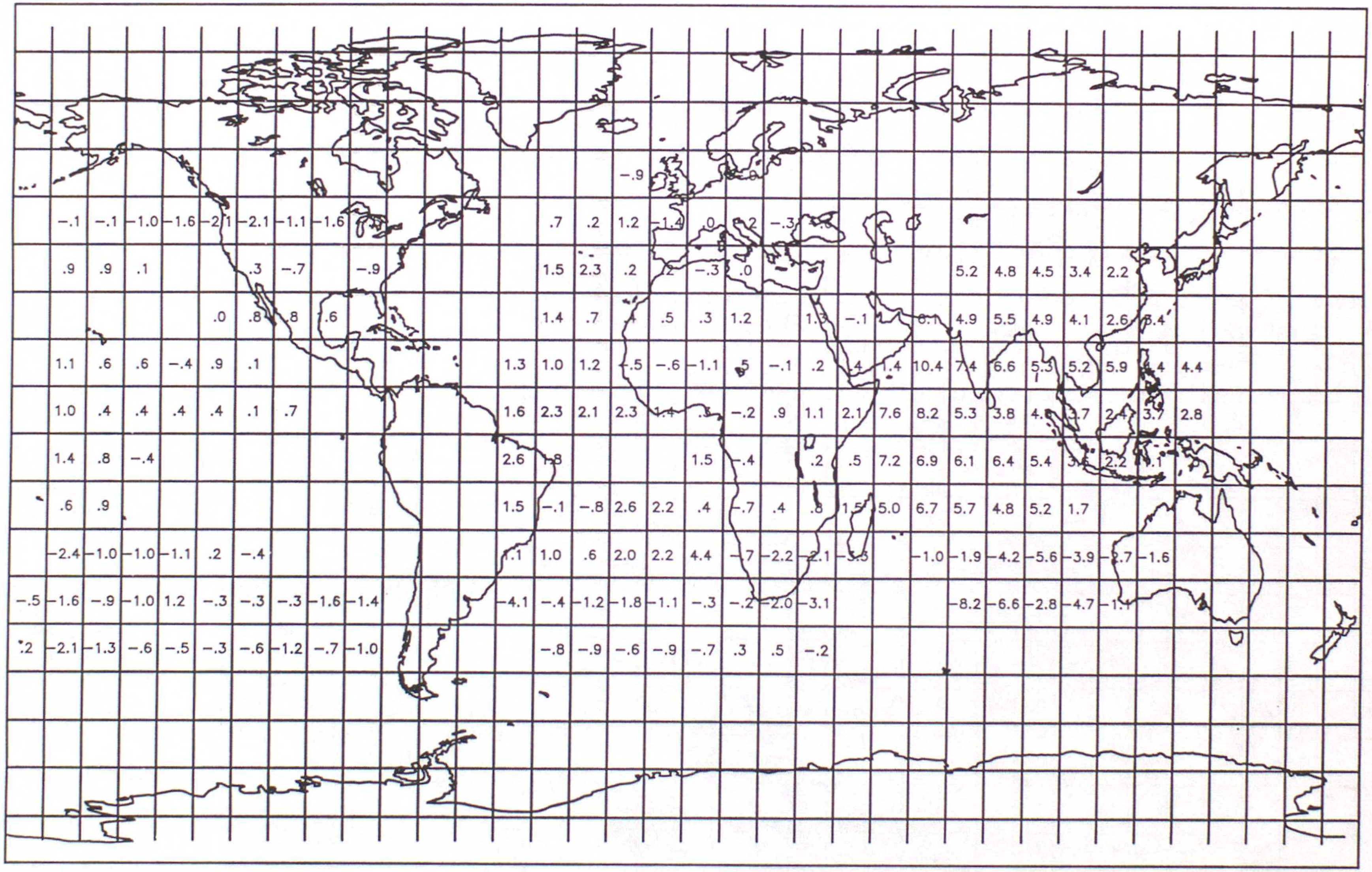

REPRESENTS 10 M/S

SATOB O–B VECTOR WIND DIFFERENCES BETWEEN 401–700 HPA
AUGUST 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

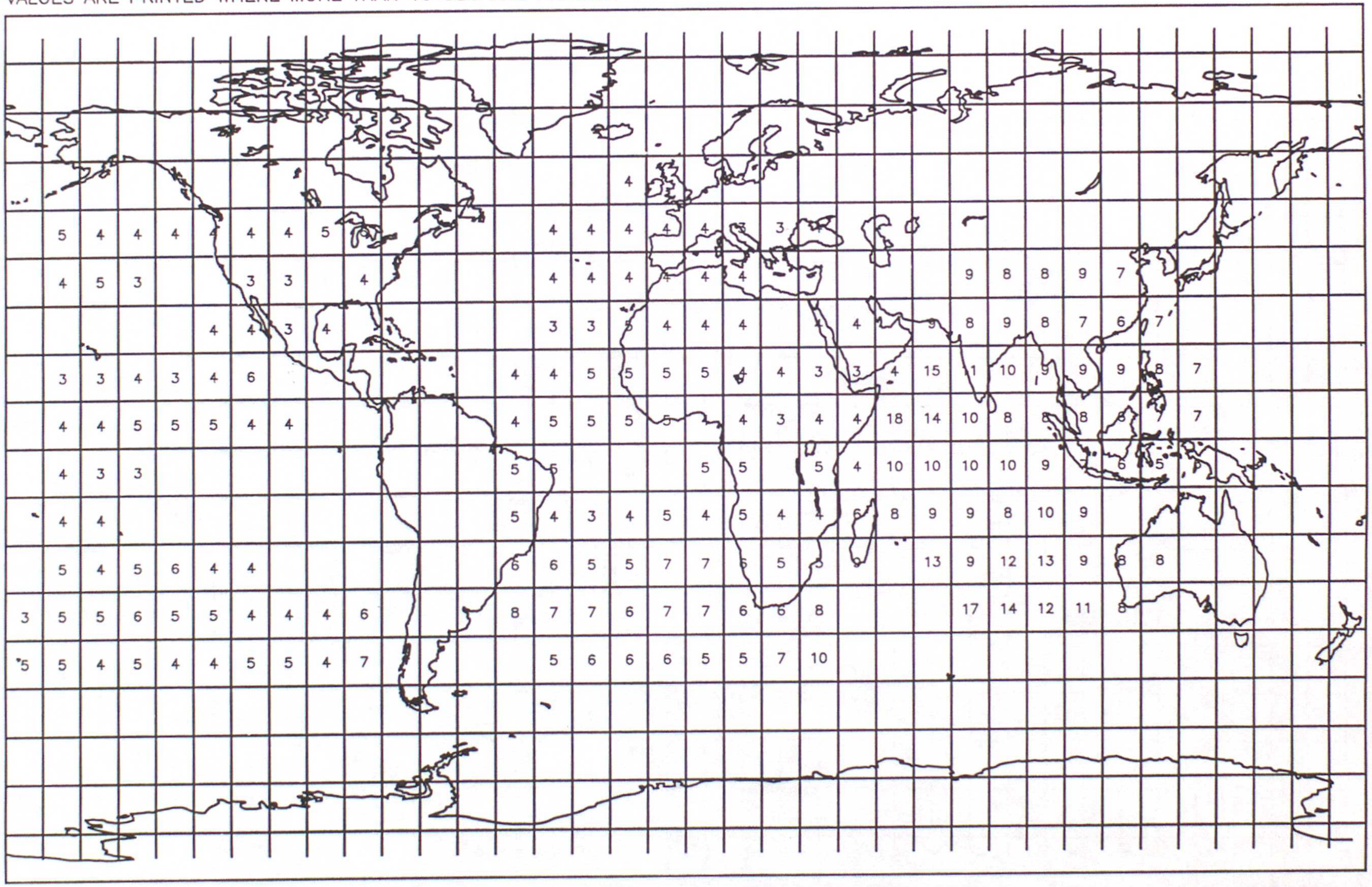
FIGURE 17



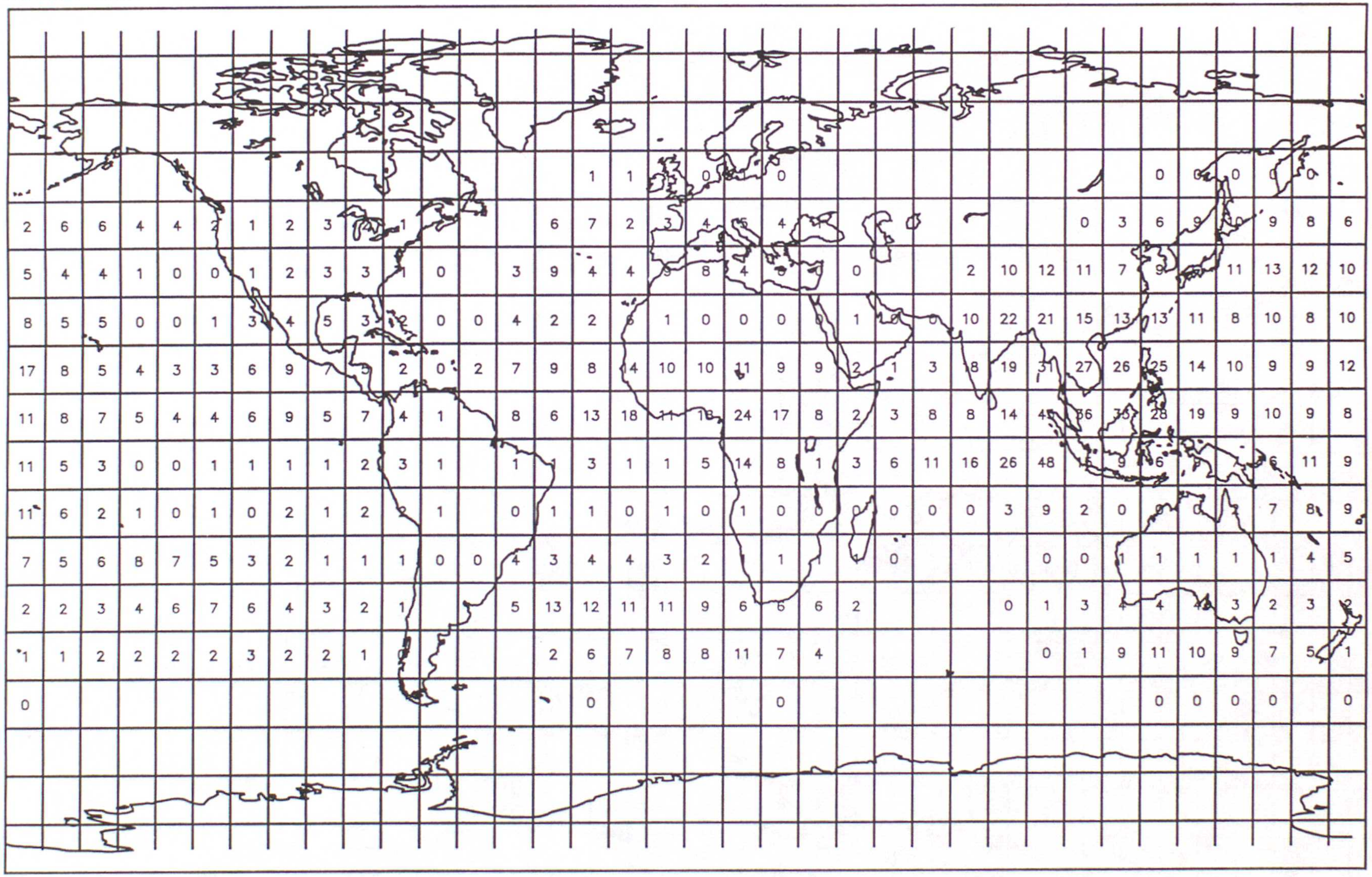
SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 18
AUGUST 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


–.9
–.1 –.1 –1.0 –1.6 –2.1 –2.1 –1.1 –1.6 .7 .2 1.2 –1.4 .0 .2 –.3
.9 .9 .1 .3 –.7 –.9 1.5 2.3 .2 .2 –.3 .0 5.2 4.8 4.5 3.4 2.2
.0 .8 .8 .6 1.4 .7 .4 .5 .3 1.2 1.3 –.1 6.1 4.9 5.5 4.9 4.1 2.6 3.4
1.1 .6 .6 –.4 .9 .1 1.3 1.0 1.2 –.5 –.6 –1.1 .5 –.1 .2 .4 1.4 10.4 7.4 6.6 5.3 5.2 5.9 4.4 4.4
1.0 .4 .4 .4 .4 .1 .7 1.6 2.3 2.1 2.3 1.4 .3 –.2 .9 1.1 2.1 7.6 8.2 5.3 3.8 4.8 3.7 2.4 3.7 2.8
1.4 .8 –.4 2.6 .8 1.5 –.4 .2 .5 7.2 6.9 6.1 6.4 5.4 3.6 2.2 1.1
.6 .9 1.5 –.1 –.8 2.6 2.2 .4 –.7 .4 .8 1.5 5.0 6.7 5.7 4.8 5.2 1.7
–2.4 –1.0 –1.0 –1.1 .2 –.4 .1 1.0 .6 2.0 2.2 4.4 –.7 –2.2 –2.1 –3.3 –1.0 –1.9 –4.2 –5.6 –3.9 –2.7 –1.6
–.5 –1.6 –.9 –1.0 1.2 –.3 –.3 –.3 –1.6 –1.4 –4.1 –.4 –1.2 –1.8 –1.1 –.3 –.2 –2.0 –3.1 –8.2 –6.6 –2.8 –4.7 –1.1
.2 –2.1 –1.3 –.6 –.5 –.3 –.6 –1.2 –.7 –1.0 –.8 –.9 –.6 –.9 –.7 .3 .5 –.2

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 19
AUGUST 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

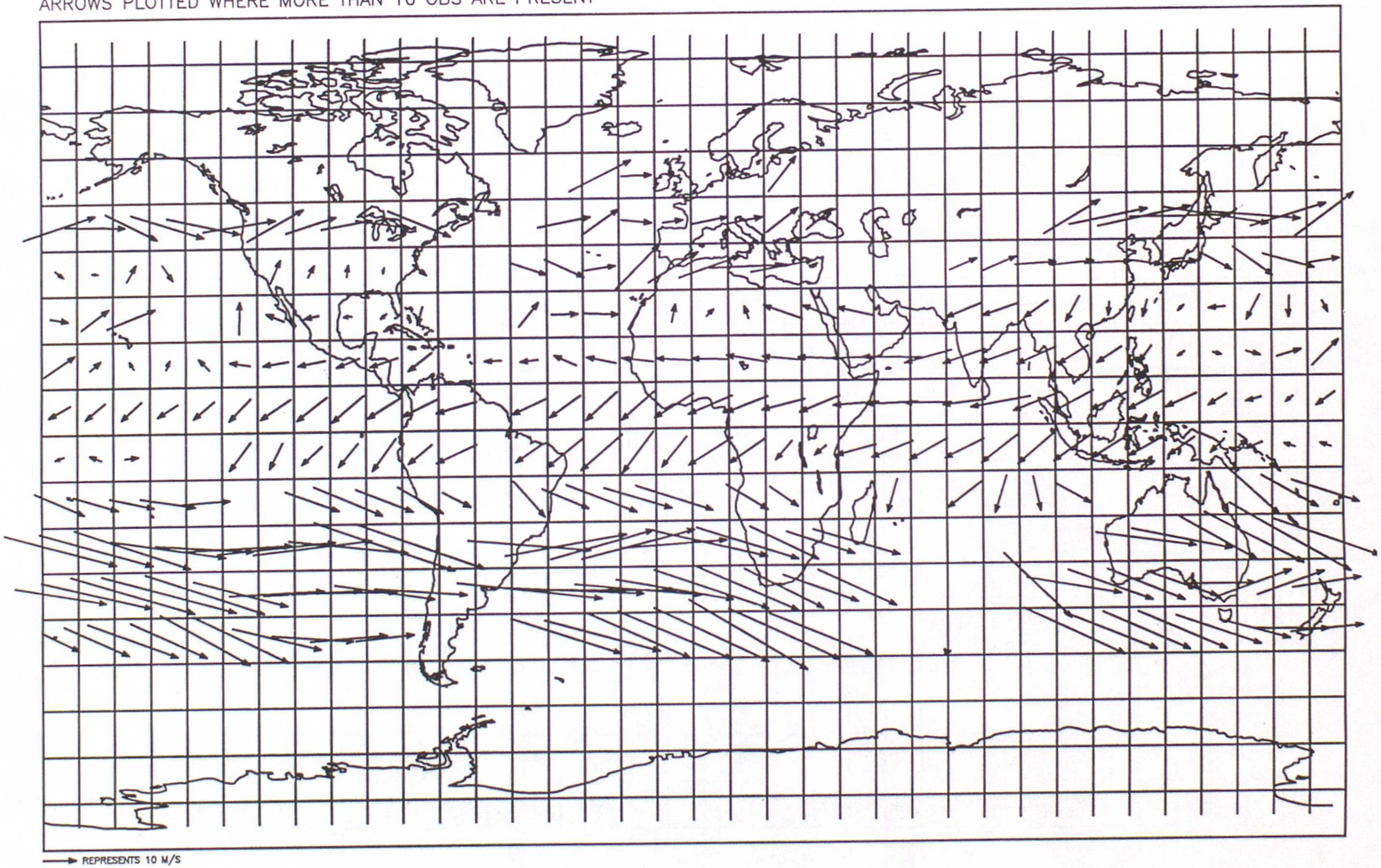

4
5 4 4 4 4 4 4 5 4 4 4 4 4 3 3
4 5 3 3 3 4 4 4 4 4 4 4 9 8 8 9 7
4 4 3 4 3 3 5 4 4 4 4 4 9 8 9 8 7 6 7
3 3 4 3 4 6 4 4 5 5 5 5 4 4 3 3 4 15 11 10 9 9 9 8 7
4 4 5 5 5 4 4 4 5 5 5 5 4 3 4 4 18 14 10 8 8 8 8 7 7
4 3 3 5 5 5 5 5 4 10 10 10 10 9 7 6 5
4 4 5 4 3 4 5 4 5 4 4 6 8 9 9 8 10 9
5 4 5 6 4 4 6 6 5 5 7 7 6 5 5 9 13 9 12 13 9 8 8
3 5 5 6 5 5 4 4 4 6 8 7 7 6 7 7 6 6 8 17 14 12 11 8
5 5 4 5 4 4 5 5 4 7 5 6 6 6 5 5 7 10

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 20
AUGUST 1995


1 1 0 0 0 0 0 0 0
2 6 6 4 4 2 1 2 3 1 6 7 2 3 4 5 4 1 0 3 6 9 10 9 8 6
5 4 4 1 0 0 1 2 3 3 1 0 3 9 4 4 9 8 4 6 0 0 2 10 12 11 7 9 11 13 12 10
8 5 5 0 0 1 3 4 5 3 2 0 0 4 2 2 6 1 0 0 0 0 1 0 0 10 22 21 15 13 13 11 8 10 8 10
17 8 5 4 3 3 6 9 7 5 2 0 2 7 9 8 14 10 10 11 9 9 2 1 3 18 19 31 27 26 25 14 10 9 9 12
11 8 7 5 4 4 6 9 5 7 4 1 8 6 13 18 11 18 24 17 8 2 3 8 8 14 45 36 35 28 19 9 10 9 8
11 5 3 0 0 1 1 1 1 2 3 1 1 1 3 1 1 5 14 8 1 3 6 11 16 26 48 15 9 6 9 7 6 11 9
11 6 2 1 0 1 0 2 1 2 2 1 0 1 1 0 1 0 1 0 0 0 0 0 0 3 9 2 0 0 0 2 7 8 9
7 5 6 8 7 5 3 2 1 1 1 0 0 4 3 4 4 3 2 1 1 1 1 0 0 0 1 1 1 1 1 4 5
2 2 3 4 6 7 6 4 3 2 1 5 13 12 11 11 9 6 6 6 2 0 1 3 4 4 4 3 2 3 2
1 1 2 2 2 2 3 2 2 1 0 2 6 7 8 8 11 7 4 0 1 9 11 10 9 7 5 1
0 0 0 0 0 0 0 0

SATOB VECTOR MEAN WINDS BETWEEN 101–400 HPA
AUGUST 1995
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 21


REPRESENTS 10 M/S

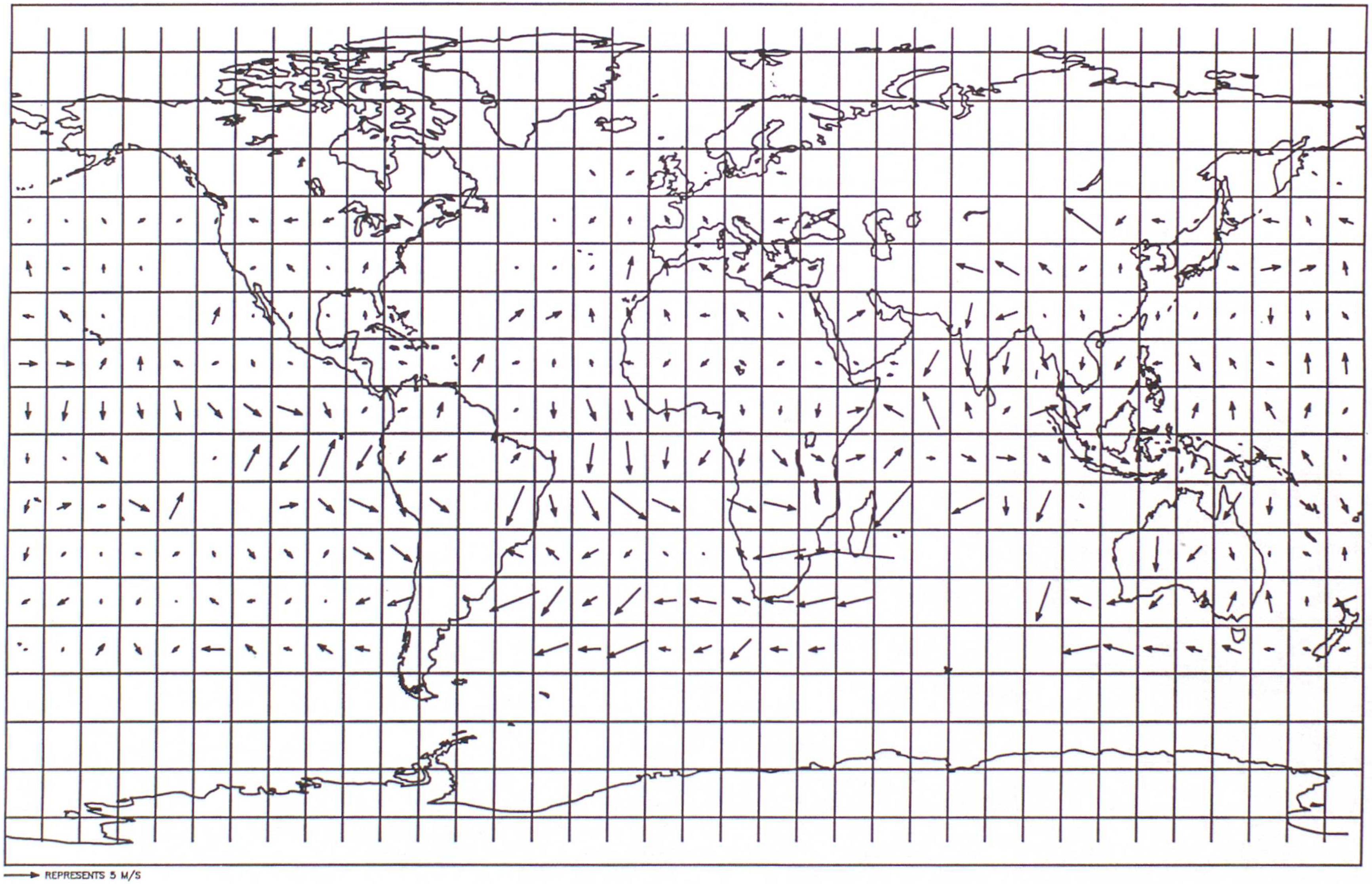
SATOB O–B VECTOR WIND DIFFERENCES BETWEEN 101–400 HPA

FIGURE 22

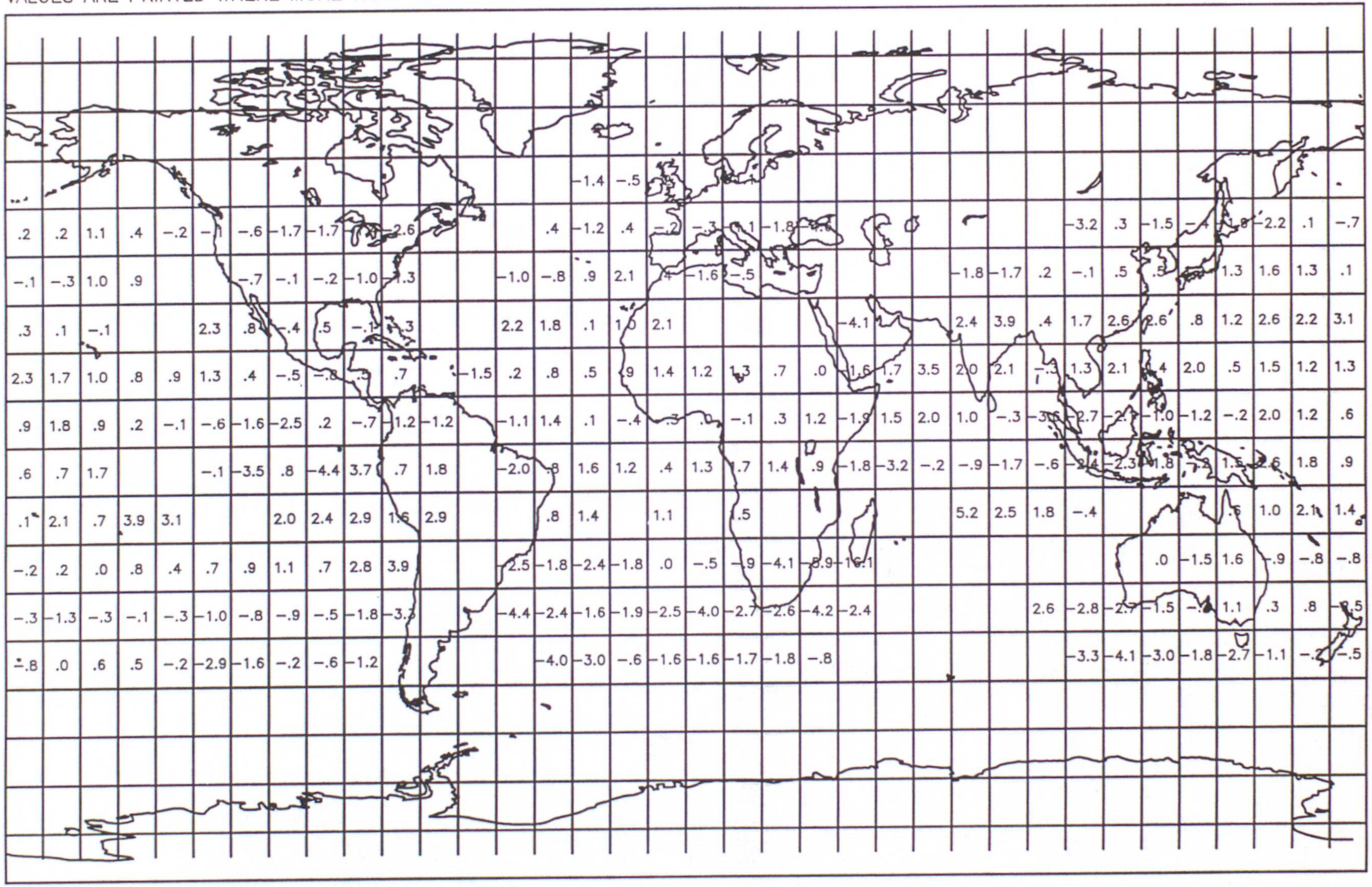
AUGUST 1995

ALL OBSERVATIONS

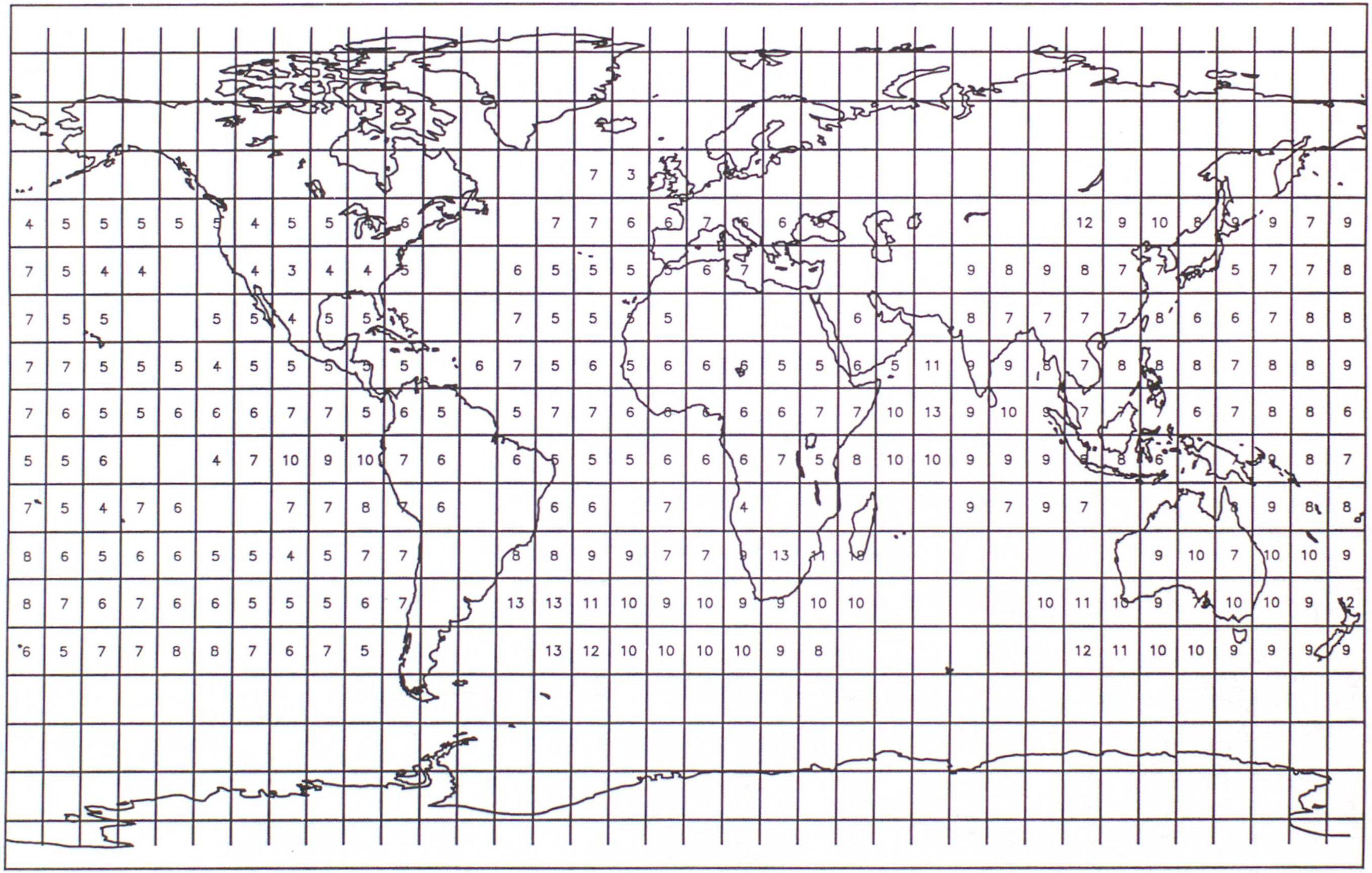
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT



SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 23
AUGUST 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-1.4 -.5
.2 .2 1.1 .4 -.2 -.1 -.6 -1.7 -1.7 -2.6 .4 -1.2 .4 -.2 -.3 .1 -1.8 -.6 -3.2 .3 -1.5 -.4 .8 -2.2 .1 -.7
-.1 -.3 1.0 .9 -.7 -.1 -.2 -1.0 1.3 -1.0 -.8 .9 2.1 .4 -1.6 -.5 -1.8 -1.7 .2 -.1 .5 .5 1.3 1.6 1.3 .1
.3 .1 -.1 2.3 .8 -.4 .5 -.1 .3 2.2 1.8 .1 1.0 2.1 -4.1 2.4 3.9 .4 1.7 2.6 2.6 .8 1.2 2.6 2.2 3.1
2.3 1.7 1.0 .8 .9 1.3 .4 -.5 -.8 .3 .7 -1.5 .2 .8 .5 .9 1.4 1.2 1.3 .7 .0 1.6 1.7 3.5 2.0 2.1 -.3 1.3 2.1 .4 2.0 .5 1.5 1.2 1.3
.9 1.8 .9 .2 -.1 -.6 -1.6 -2.5 .2 -.7 -1.2 -1.2 -1.1 1.4 .1 -.4 .3 .0 -.1 .3 1.2 -1.9 1.5 2.0 1.0 -.3 -3.6 -2.7 -2.7 -1.0 -1.2 -.2 2.0 1.2 .6
.6 .7 1.7 -.1 -3.5 .8 -4.4 3.7 .7 1.8 -2.0 .8 1.6 1.2 .4 1.3 1.7 1.4 .9 -1.8 -3.2 -.2 -.9 -1.7 -.6 -2.4 -2.3 -1.8 .2 1.5 2.6 1.8 .9
.1 2.1 .7 3.9 3.1 2.0 2.4 2.9 1.6 2.9 .8 1.4 1.1 .5 5.2 2.5 1.8 -.4 .6 1.0 2.1 1.4
-.2 .2 .0 .8 .4 .7 .9 1.1 .7 2.8 3.9 2.5 -1.8 -2.4 -1.8 .0 -.5 -.9 -4.1 -5.9 -16.1 .0 -1.5 1.6 -.9 -.8 -.8
-.3 -1.3 -.3 -.1 -.3 -1.0 -.8 -.9 -.5 -1.8 -3.3 -4.4 -2.4 -1.6 -1.9 -2.5 -4.0 -2.7 -2.6 -4.2 -2.4 2.6 -2.8 -2.7 -1.5 -.4 1.1 .3 .8 -2.5
-.8 .0 .6 .5 -.2 -2.9 -1.6 -.2 -.6 -1.2 -4.0 -3.0 -.6 -1.6 -1.6 -1.7 -1.8 -.8 -3.3 -4.1 -3.0 -1.8 -2.7 -1.1 -.2 -.5

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 24
AUGUST 1995
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


7 3
4 5 5 5 5 5 4 5 5 6 7 7 6 6 7 6 6 12 9 10 8 9 9 7 9
7 5 4 4 4 3 4 4 5 6 5 5 5 5 6 7 9 8 9 8 7 7 5 7 7 8
7 5 5 5 5 4 5 5 5 7 5 5 5 5 6 8 7 7 7 7 8 6 6 7 8 8
7 7 5 5 5 4 5 5 5 5 5 6 7 5 6 5 6 6 6 5 5 6 5 11 9 9 8 7 8 8 8 7 8 8 9
7 6 5 5 6 6 6 7 7 5 6 5 5 7 7 6 6 6 6 6 7 7 10 13 9 10 9 7 7 7 6 7 8 8 6
5 5 6 4 7 10 9 10 7 6 6 5 5 5 6 6 6 7 5 8 10 10 9 9 9 8 8 6 9 8 7
7 5 4 7 6 7 7 8 7 6 6 6 7 4 9 7 9 7 8 9 8 8
8 6 5 6 6 5 5 4 5 7 7 8 8 9 9 7 7 9 13 11 10 9 10 7 10 10 9
8 7 6 7 6 6 5 5 5 6 7 13 13 11 10 9 10 9 9 10 10 10 11 10 9 7 10 10 9 12
6 5 7 7 8 8 7 6 7 5 13 12 10 10 10 10 9 8 12 11 10 10 9 9 9 9

MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH:AUGUST, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-12, NOAA-14 500 km.

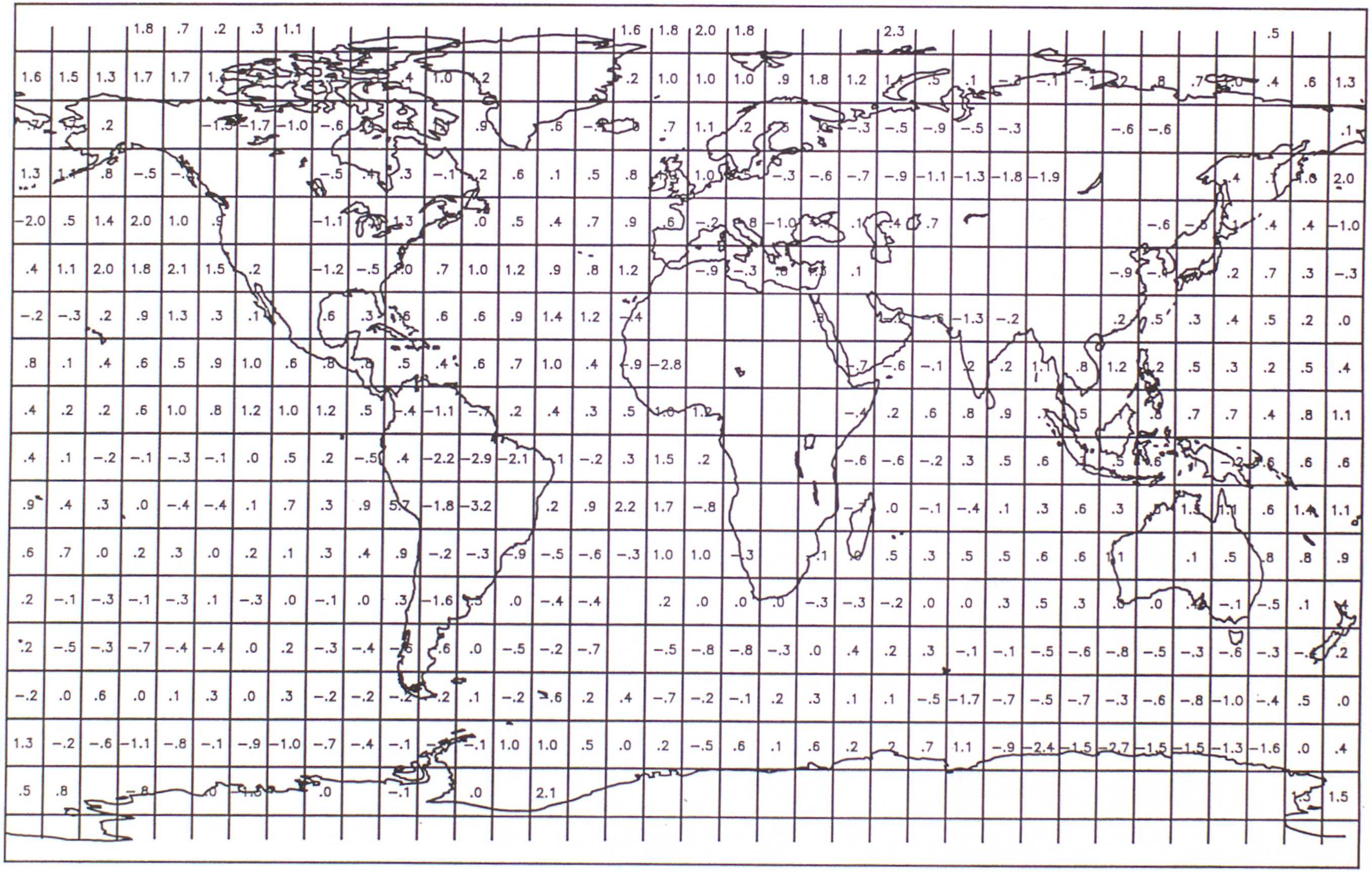
Standard of comparison :Background field from Bracknell global model.

Selection Criteria :All SATEM soundings where number of observations > 30.

Data Extracted :Layer:850 - 1000 hPa
100 - 300 hPa
30 - 50 hPa

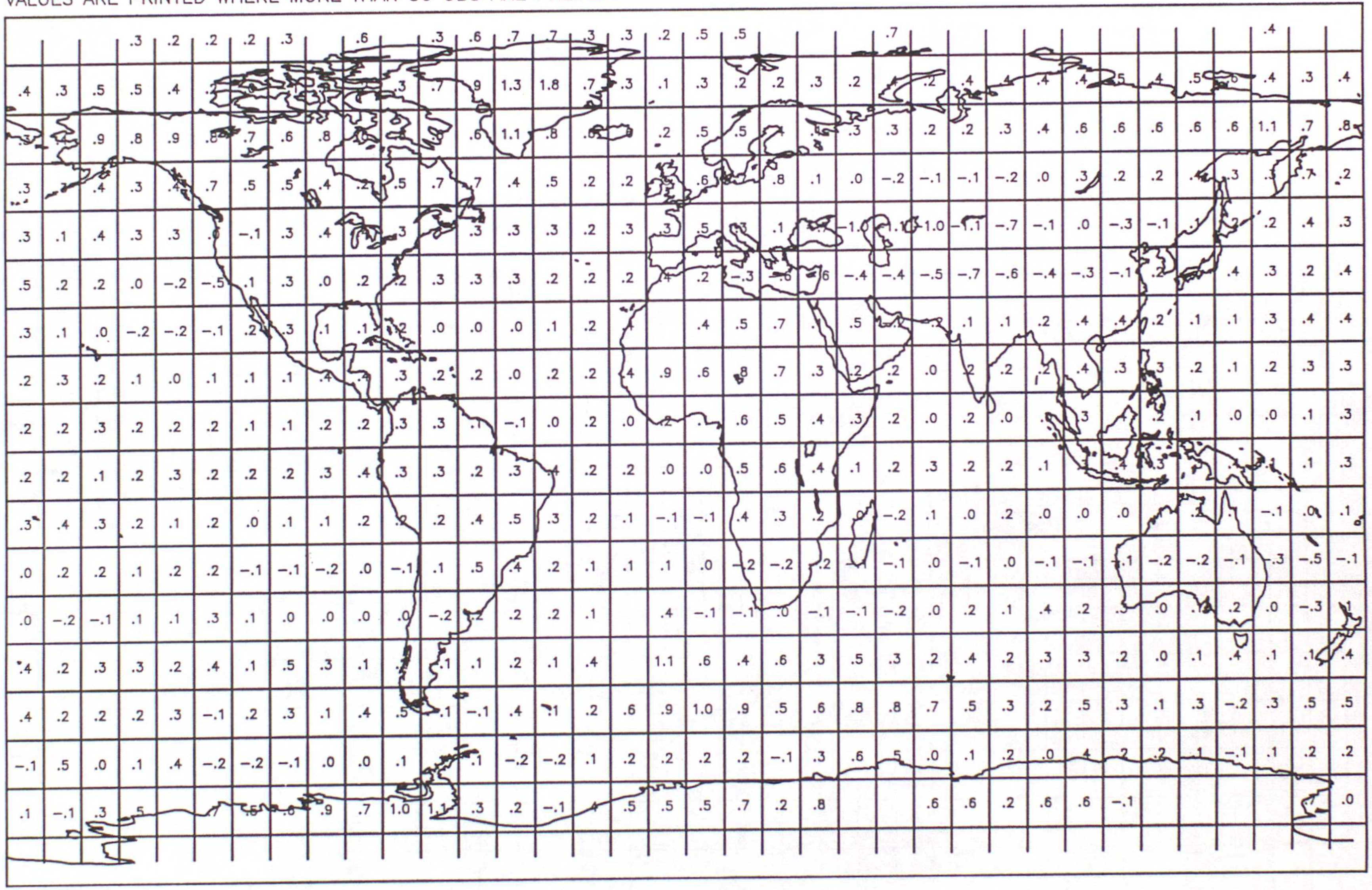
:Mean observation minus background temperature differences

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
AUGUST 1995
FIGURE 25
NOAA–12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

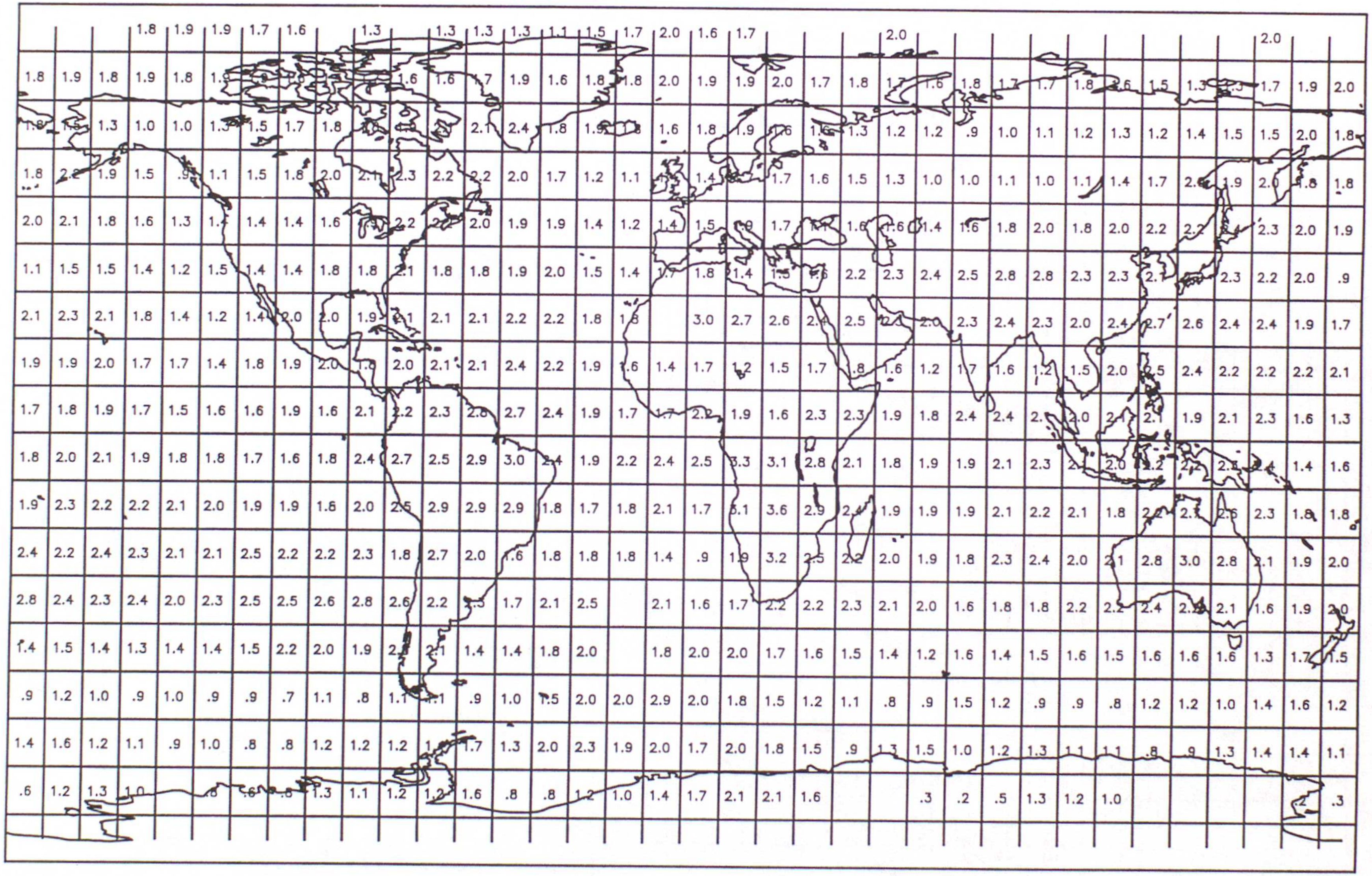

1.8 .7 .2 .3 1.1 1.6 1.8 2.0 1.8 2.3 .5
1.6 1.5 1.3 1.7 1.7 .4 1.0 .2 .2 1.0 1.0 1.0 .9 1.8 1.2 .5 .1 –.3 –.1 –.1 .2 .8 .7 .0 .4 .6 1.3
.2 –1.7 –1.0 –.6 .9 .6 .7 1.1 .2 –.3 –.5 –.9 –.5 –.3 –.6 –.6 .1
1.3 .8 –.5 –.5 .4 .3 –.1 .2 .6 .1 .5 .8 1.0 –.3 –.6 –.7 –.9 –1.1 –1.3 –1.8 –1.9 .4 2.0
–2.0 .5 1.4 2.0 1.0 –1.1 1.3 .0 .5 .4 .7 .9 .6 –.2 .8 –1.0 .1 .4 .7 –.6 .4 .4 –1.0
.4 1.1 2.0 1.8 2.1 1.5 .2 –1.2 –.5 .0 .7 1.0 1.2 .9 .8 1.2 –.9 –.3 .1 –.9 .2 .7 .3 –.3
–.2 –.3 .2 .9 1.3 .3 .1 .6 .3 .6 .6 .6 .9 1.4 1.2 –1.3 –.2 .2 .5 .3 .4 .5 .2 .0
.8 .1 .4 .6 .5 .9 1.0 .6 .5 .4 .6 .7 1.0 .4 –.9 –2.8 –.7 –.6 –.1 .2 .2 .8 1.2 .2 .5 .3 .2 .5 .4
.4 .2 .2 .6 1.0 .8 1.2 1.0 1.2 .5 –.4 –1.1 .2 .4 .3 .5 1.2 –.4 .2 .6 .8 .9 .5 .7 .7 .4 .8 1.1
.4 .1 –.2 –.1 –.3 –.1 .0 .5 .2 –.5 .4 –2.2 –2.9 –2.1 .1 –.2 .3 1.5 .2 –.6 –.6 –.2 .3 .5 .6 .5 .6 .6 .6
.9 .4 .3 .0 –.4 –.4 .1 .7 .3 .9 5.7 –1.8 –3.2 .2 .9 2.2 1.7 –.8 .0 –.1 –.4 .1 .3 .6 .3 1.1 .6 1.4 1.1
.6 .7 .0 .2 .3 .0 .2 .1 .3 .4 .9 –.2 –.3 .9 –.5 –.6 –.3 1.0 1.0 –.3 .1 .5 .3 .5 .5 .6 .6 1.1 .1 .5 .8 .8 .9
.2 –.1 –.3 –.1 –.3 .1 –.3 .0 –.1 .0 .3 –1.6 .0 –.4 –.4 .2 .0 .0 .0 –.3 –.3 –.2 .0 .0 .3 .5 .3 .0 –.1 –.5 .1
.2 –.5 –.3 –.7 –.4 –.4 .0 .2 –.3 –.4 –.6 .6 .0 –.5 –.2 –.7 –.5 –.8 –.8 –.3 .0 .4 .2 .3 –.1 –.1 –.5 –.6 –.8 –.5 –.3 –.6 –.3 .2
–.2 .0 .6 .0 .1 .3 .0 .3 –.2 –.2 –.2 .2 .1 –.2 .6 .2 .4 –.7 –.2 –.1 .2 .3 .1 .1 –.5 –1.7 –.7 –.5 –.7 –.3 –.6 –.8 –1.0 –.4 .5 .0
1.3 –.2 –.6 –1.1 –.8 –.1 –.9 –1.0 –.7 –.4 –.1 –.1 1.0 1.0 .5 .0 .2 –.5 .6 .1 .6 .2 .2 .7 1.1 –.9 –2.4 –1.5 –2.7 –1.5 –1.5 –1.3 –1.6 .0 .4
.5 .8 –.8 .0 .0 –.1 .0 2.1 .3 1.5

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
AUGUST 1995
NOAA–12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 26

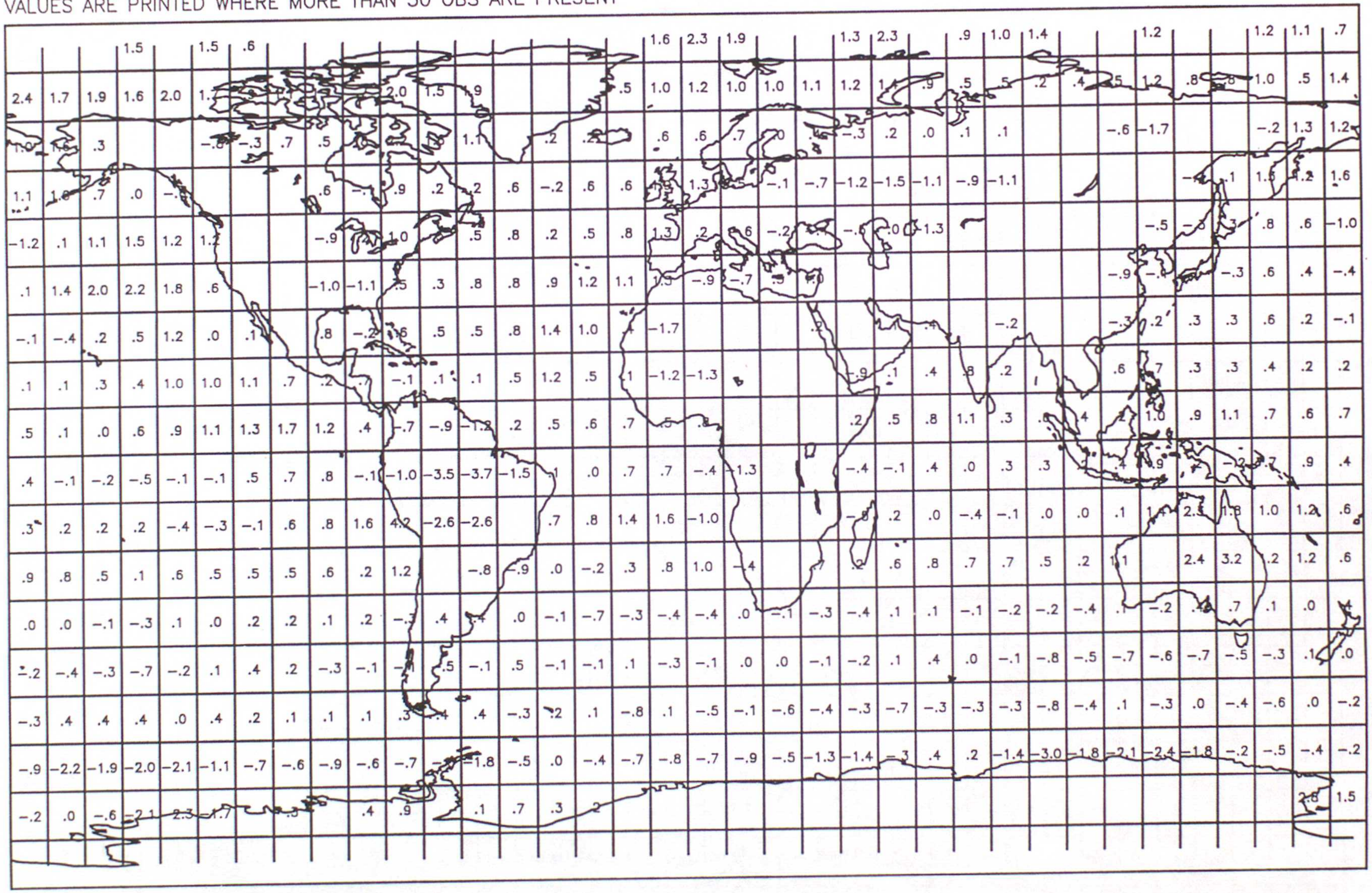

.3 .2 .2 .2 .3 .6 .3 .6 .7 .7 .3 .3 .2 .5 .5 .7 .4
.4 .3 .5 .5 .4 .3 .7 .9 1.3 1.8 .7 .3 .1 .3 .2 .2 .3 .2 .4 .2 .4 .4 .4 .4 .5 .4 .5 .6 .4 .3 .4
.9 .8 .9 .8 .7 .6 .8 .6 1.1 .8 .6 .2 .5 .5 .3 .3 .2 .2 .3 .4 .6 .6 .6 .6 .6 1.1 .7 .8
.3 .4 .3 .4 .7 .5 .5 .4 .2 .5 .7 .7 .4 .5 .2 .2 .6 .8 .1 .0 –.2 –.1 –.1 –.2 .0 .3 .2 .2 .4 .3 .3 .7 .2
.3 .1 .4 .3 .3 .6 –.1 .3 .4 .4 .3 .3 .3 .3 .2 .3 .3 .5 .3 .1 –.7 –1.0 –1.1 –1.0 –1.1 –.7 –.1 .0 –.3 –.1 .1 .2 .2 .4 .3
.5 .2 .2 .0 –.2 –.5 .1 .3 .0 .2 .2 .3 .3 .3 .2 .2 .2 .4 .2 –.3 –.6 –.6 –.4 –.4 –.5 –.7 –.6 –.4 –.3 –.1 .2 .4 .3 .2 .4
.3 .1 .0 –.2 –.2 –.1 .2 .3 .1 .1 .2 .0 .0 .0 .1 .2 .4 .4 .5 .7 .5 .2 .2 .1 .1 .2 .4 .4 .2 .1 .1 .3 .4 .4
.2 .3 .2 .1 .0 .1 .1 .1 .4 .4 .3 .2 .2 .0 .2 .2 .4 .9 .6 .8 .7 .3 .2 .2 .0 .2 .2 .2 .4 .3 .3 .2 .1 .2 .3 .3
.2 .2 .3 .2 .2 .2 .1 .1 .2 .2 .3 .3 .1 –.1 .0 .2 .0 .2 .6 .5 .4 .3 .2 .0 .2 .0 .3 .2 .1 .0 .0 .1 .3
.2 .2 .1 .2 .3 .2 .2 .2 .3 .4 .3 .3 .2 .3 .4 .2 .2 .0 .0 .5 .6 .4 .1 .2 .3 .2 .2 .1 .4 .3 .1 .3
.3 .4 .3 .2 .1 .2 .0 .1 .1 .2 .2 .2 .4 .5 .3 .2 .1 –.1 –.1 .4 .3 .2 .0 –.2 .1 .0 .2 .0 .0 .0 .2 –.1 .0 .1
.0 .2 .2 .1 .2 .2 –.1 –.1 –.2 .0 –.1 .1 .5 .4 .2 .1 .1 .1 .0 –.2 –.2 .2 –.1 –.1 .0 –.1 .0 –.1 –.1 –.1 –.2 –.2 –.1 –.3 –.5 –.1
.0 –.2 –.1 .1 .1 .3 .1 .0 .0 .0 .0 –.2 .2 .2 .2 .1 .4 –.1 –.1 .0 –.1 –.1 –.2 .0 .2 .1 .4 .2 .3 .0 .1 .2 .0 –.3 .1
.4 .2 .3 .3 .2 .4 .1 .5 .3 .1 .1 .1 .2 .1 .4 1.1 .6 .4 .6 .3 .5 .3 .2 .4 .2 .3 .3 .2 .0 .1 .4 .1 .1 .4
.4 .2 .2 .2 .3 –.1 .2 .3 .1 .4 .5 .1 –.1 .4 .1 .2 .6 .9 1.0 .9 .5 .6 .8 .8 .7 .5 .3 .2 .5 .3 .1 .3 –.2 .3 .5 .5
–.1 .5 .0 .1 .4 –.2 –.2 –.1 .0 .0 .1 .1 –.2 –.2 .1 .2 .2 .2 .2 –.1 .3 .6 .5 .0 .1 .2 .0 .4 .2 .2 .1 –.1 .1 .2 .2
.1 –.1 .3 .5 .7 .5 .6 .9 .7 1.0 1.1 .3 .2 –.1 .4 .5 .5 .5 .7 .2 .8 .6 .6 .2 .6 .6 –.1 .7 .0

500 KM SATEMS : MEAN O−B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
AUGUST 1995
FIGURE 27
NOAA−12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

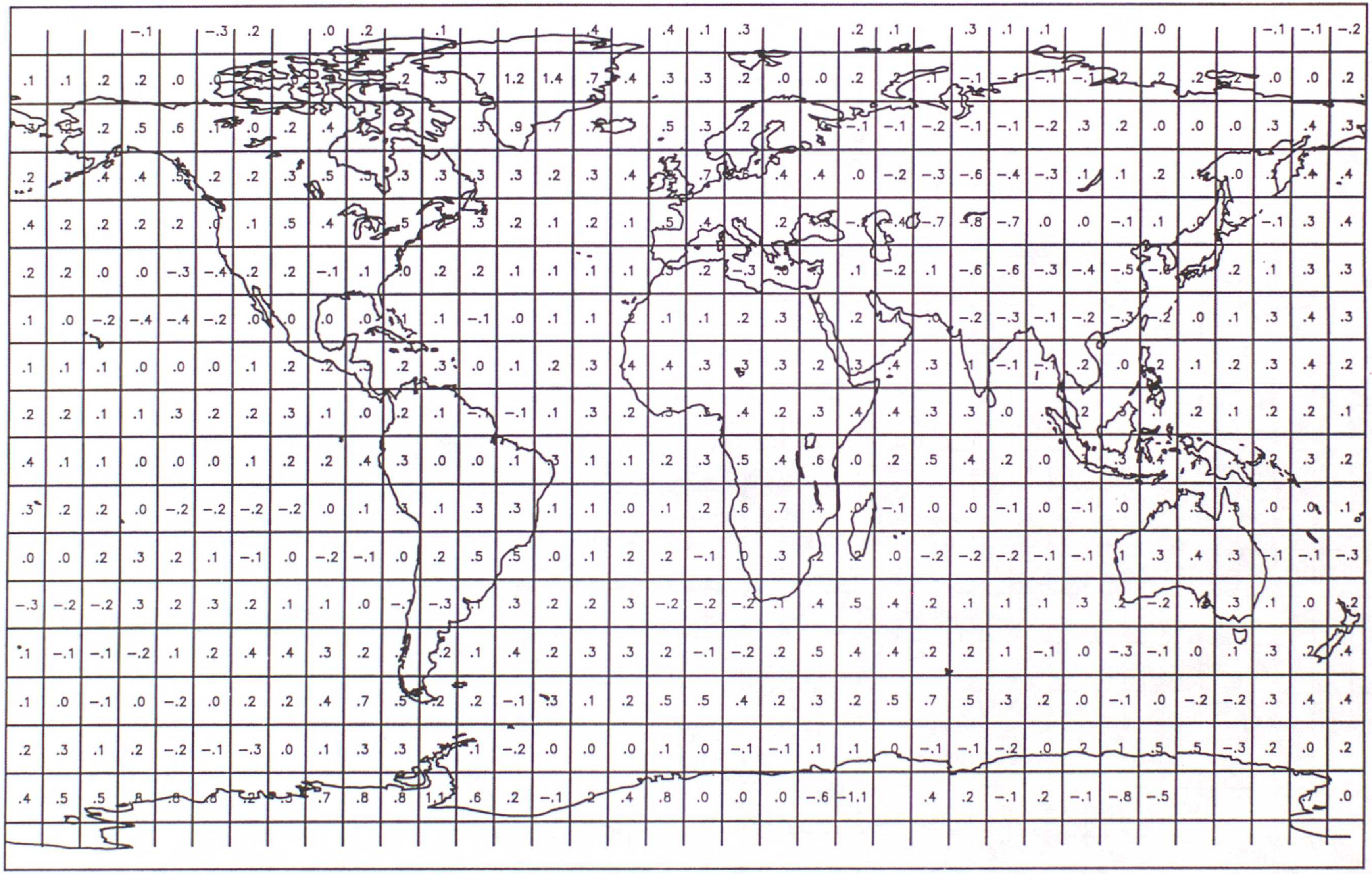

1.8 1.9 1.9 1.7 1.6 1.3 1.3 1.3 1.3 1.1 1.5 1.7 2.0 1.6 1.7 2.0 2.0
1.8 1.9 1.8 1.9 1.8 1.6 1.6 1.7 1.9 1.6 1.8 1.8 2.0 1.9 1.9 2.0 1.7 1.8 1.7 1.6 1.8 1.7 1.7 1.8 1.6 1.5 1.3 1.7 1.9 2.0
1.3 1.0 1.0 1.3 1.5 1.7 1.8 2.1 2.4 1.8 1.9 1.6 1.8 1.9 1.6 1.6 1.3 1.2 1.2 .9 1.0 1.1 1.2 1.3 1.2 1.4 1.5 1.5 2.0 1.8
1.8 2.2 1.9 1.5 .9 1.1 1.5 1.8 2.0 2.1 2.3 2.2 2.2 2.0 1.7 1.2 1.1 1.4 1.7 1.6 1.5 1.3 1.0 1.0 1.1 1.0 1.1 1.4 1.7 2.6 1.9 2.0 1.8 1.8
2.0 2.1 1.8 1.6 1.3 1.4 1.4 1.6 2.2 2.0 1.9 1.9 1.4 1.2 1.4 1.5 1.7 1.6 1.6 1.4 1.6 1.8 2.0 1.8 2.0 2.2 2.2 2.3 2.0 1.9
1.1 1.5 1.5 1.4 1.2 1.5 1.4 1.4 1.8 1.8 2.1 1.8 1.8 1.9 2.0 1.5 1.4 1.7 1.8 1.4 2.2 2.3 2.4 2.5 2.8 2.8 2.3 2.3 2.1 2.3 2.2 2.0 .9
2.1 2.3 2.1 1.8 1.4 1.2 1.4 2.0 2.0 1.9 2.1 2.1 2.1 2.2 2.2 1.8 1.8 3.0 2.7 2.6 2.4 2.5 2.0 2.3 2.4 2.3 2.0 2.4 2.7 2.6 2.4 2.4 1.9 1.7
1.9 1.9 2.0 1.7 1.7 1.4 1.8 1.9 2.0 1.8 2.0 2.1 2.1 2.4 2.2 1.9 1.6 1.4 1.7 1.2 1.5 1.7 1.8 1.6 1.2 1.7 1.6 1.2 1.5 2.0 2.5 2.4 2.2 2.2 2.2 2.1
1.7 1.8 1.9 1.7 1.5 1.6 1.6 1.9 1.6 2.1 2.2 2.3 2.8 2.7 2.4 1.9 1.7 1.7 2.2 1.9 1.6 2.3 2.3 1.9 1.8 2.4 2.4 2.0 2.1 1.9 2.1 2.3 1.6 1.3
1.8 2.0 2.1 1.9 1.8 1.8 1.7 1.6 1.8 2.4 2.7 2.5 2.9 3.0 2.4 1.9 2.2 2.4 2.5 3.3 3.1 2.8 2.1 1.8 1.9 1.9 2.1 2.3 2.0 2.2 1.4 1.6
1.9 2.3 2.2 2.2 2.1 2.0 1.9 1.9 1.6 2.0 2.5 2.9 2.9 2.9 1.8 1.7 1.8 2.1 1.7 3.1 3.6 2.9 2.4 1.9 1.9 1.9 2.1 2.2 2.1 1.8 2.2 2.7 2.6 2.3 1.8 1.8
2.4 2.2 2.4 2.3 2.1 2.1 2.5 2.2 2.2 2.3 1.8 2.7 2.0 1.6 1.8 1.8 1.8 1.4 .9 1.9 3.2 2.5 2.2 2.0 1.9 1.8 2.3 2.4 2.0 2.1 2.8 3.0 2.8 2.1 1.9 2.0
2.8 2.4 2.3 2.4 2.0 2.3 2.5 2.5 2.6 2.8 2.6 2.2 2.3 1.7 2.1 2.5 2.1 1.6 1.7 2.2 2.2 2.3 2.1 2.0 1.6 1.8 1.8 2.2 2.2 2.4 2.2 2.1 1.6 1.9 2.0
1.4 1.5 1.4 1.3 1.4 1.4 1.5 2.2 2.0 1.9 2.1 2.1 1.4 1.4 1.8 2.0 1.8 2.0 2.0 1.7 1.6 1.5 1.4 1.2 1.6 1.4 1.5 1.6 1.5 1.6 1.6 1.6 1.3 1.7 1.5
.9 1.2 1.0 .9 1.0 .9 .9 .7 1.1 .8 1.1 1.1 .9 1.0 1.5 2.0 2.0 2.9 2.0 1.8 1.5 1.2 1.1 .8 .9 1.5 1.2 .9 .9 .8 1.2 1.2 1.0 1.4 1.6 1.2
1.4 1.6 1.2 1.1 .9 1.0 .8 .8 1.2 1.2 1.2 1.7 1.3 2.0 2.3 1.9 2.0 1.7 2.0 1.8 1.5 .9 1.3 1.5 1.0 1.2 1.3 1.1 1.1 .8 .9 1.3 1.4 1.4 1.1
.6 1.2 1.3 1.0 .8 .6 .8 1.3 1.1 1.2 1.2 1.6 .8 .8 1.2 1.0 1.4 1.7 2.1 2.1 1.6 .3 .2 .5 1.3 1.2 1.0 .2 .3

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
AUGUST 1995
NOAA–14, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 28



500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
AUGUST 1995
FIGURE 29
NOAA–14, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT


-.1 -.3 .2 .0 .2 .1 .4 .4 .1 .3 .2 .1 .3 .1 .1 .0 -.1 -.1 -.2
.1 .1 .2 .2 .0 .0 .2 .3 .7 1.2 1.4 .7 .4 .3 .3 .2 .0 .0 .2 -.1 -.1 -.1 -.1 .2 .2 .2 .0 .0 .2
.3 .3 .2 .5 .6 .1 .0 .2 .4 .3 .9 .7 .7 .5 .3 .2 .1 .0 -.1 -.1 -.2 -.1 -.1 -.2 .3 .2 .0 .0 .0 .3 .4 .3
.2 .2 .4 .4 .5 .2 .2 .3 .5 .3 .3 .3 .3 .3 .2 .3 .4 .7 .6 .4 .4 .0 -.2 -.3 -.6 -.4 -.3 .1 .1 .2 .1 .0 .2 .4 .4
.4 .2 .2 .2 .2 .0 .1 .5 .4 .5 .3 .2 .1 .2 .1 .5 .4 .1 .2 -.2 -.4 -.7 -.8 -.7 .0 .0 -.1 .1 .0 .2 -.1 .3 .4
.2 .2 .0 .0 -.3 -.4 .2 .2 -.1 .1 .0 .2 .2 .1 .1 .1 .1 .3 .2 -.3 .0 .1 .1 -.2 .1 -.6 -.6 -.3 -.4 -.5 -.8 .2 .1 .3 .3
.1 .0 -.2 -.4 -.4 -.2 .0 .0 .0 .0 .1 .1 -.1 .0 .1 .1 .2 .1 .1 .2 .3 .2 .2 .0 -.2 -.3 -.1 -.2 -.3 -.2 .0 .1 .3 .4 .3
.1 .1 .1 .0 .0 .0 .1 .2 .2 .3 .2 .3 .0 .1 .2 .3 .4 .4 .3 .3 .3 .2 .3 .4 .3 .1 -.1 -.1 .2 .0 .2 .1 .2 .3 .4 .2
.2 .2 .1 .1 .3 .2 .2 .3 .1 .0 .2 .1 -.1 -.1 .1 .3 .2 .3 .3 .4 .2 .3 .4 .4 .3 .3 .0 .2 .2 .1 .2 .1 .2 .2 .1
.4 .1 .1 .0 .0 .0 .1 .2 .2 .4 .3 .0 .0 .1 .3 .1 .1 .2 .3 .5 .4 .6 .0 .2 .5 .4 .2 .0 .3 .4 .2 .3 .2
.3 .2 .2 .0 -.2 -.2 -.2 -.2 .0 .1 .3 .1 .3 .3 .1 .1 .0 .1 .2 .6 .7 .4 .0 -.1 .0 .0 -.1 .0 -.1 .0 .5 .3 .0 .0 .1
.0 .0 .2 .3 .2 .1 -.1 .0 -.2 -.1 .0 .2 .5 .5 .0 .1 .2 .2 -.1 .0 .3 .2 .2 .0 -.2 -.2 -.2 -.1 -.1 .1 .3 .4 .3 -.1 -.1 -.3
-.3 -.2 -.2 .3 .2 .3 .2 .1 .1 .0 -.1 -.3 .1 .3 .2 .2 .3 -.2 -.2 -.2 .1 .4 .5 .4 .2 .1 .1 .1 .3 .2 -.2 .1 .3 .1 .0 .2
.1 -.1 -.1 -.2 .1 .2 .4 .4 .3 .2 .2 .1 .4 .2 .3 .3 .2 -.1 -.2 .2 .5 .4 .4 .2 .2 .1 -.1 .0 -.3 -.1 .0 .1 .3 .2 .4
.1 .0 -.1 .0 -.2 .0 .2 .2 .4 .7 .5 .2 .2 -.1 .3 .1 .2 .5 .5 .4 .2 .3 .2 .5 .7 .5 .3 .2 .0 -.1 .0 -.2 -.2 .3 .4 .4
.2 .3 .1 .2 -.2 -.1 -.3 .0 .1 .3 .3 .1 -.2 .0 .0 .0 .1 .0 -.1 -.1 .1 .1 .0 -.1 -.1 -.2 .0 .2 .1 .5 .5 -.3 .2 .0 .2
.4 .5 .5 .8 .8 .8 .2 .3 .7 .8 .8 1.1 .6 .2 -.1 .2 .4 .8 .0 .0 .0 -.6 -1.1 .4 .2 -.1 .2 -.1 -.8 -.5 .7 .0

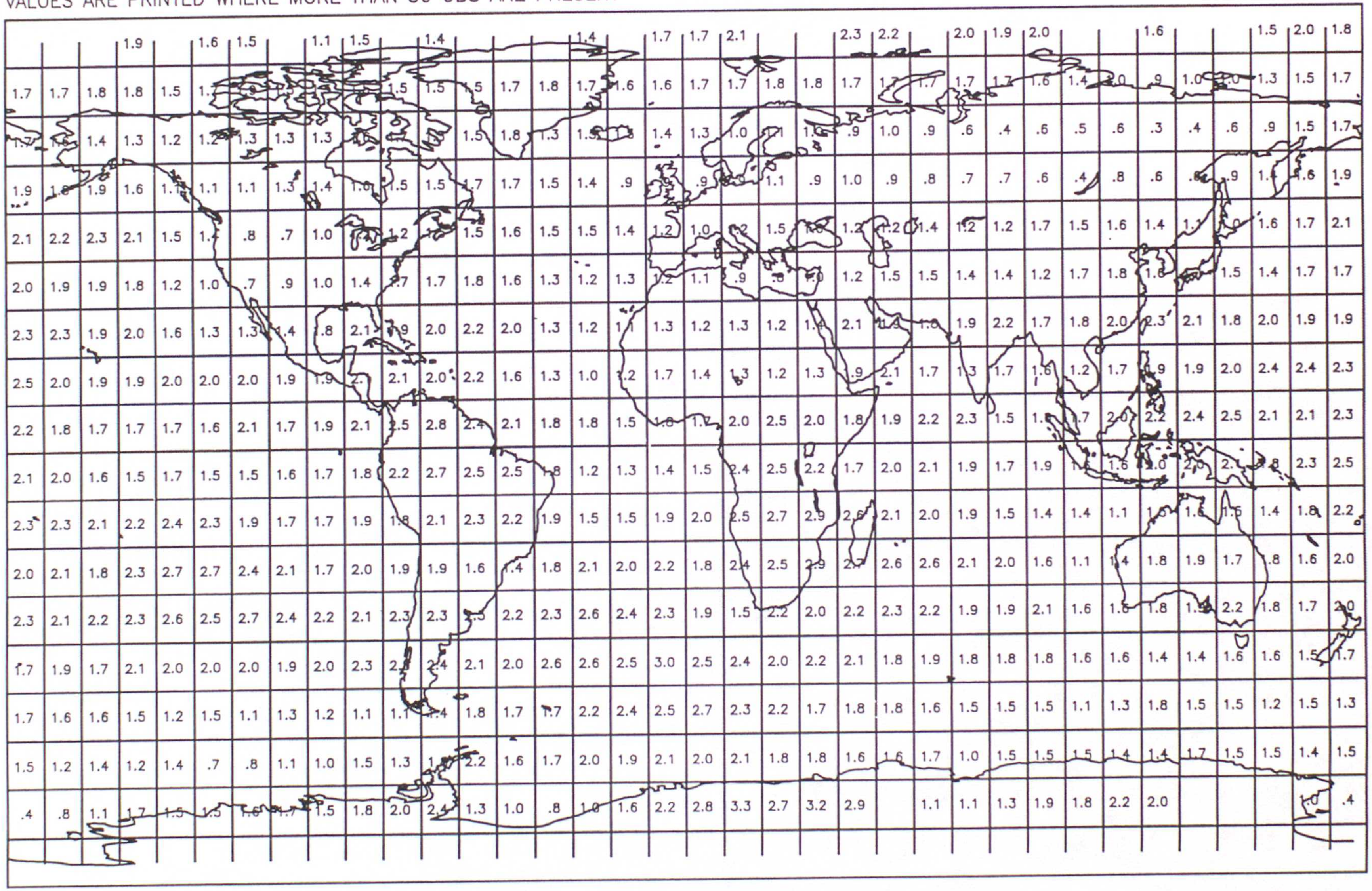
500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA

FIGURE 30

AUGUST 1995

NOAA–14, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



			1.9		1.6	1.5		1.1	1.5		1.4				1.4		1.7	1.7	2.1			2.3	2.2		2.0	1.9	2.0			1.6			1.5	2.0	1.8
1.7	1.7	1.8	1.8	1.5	[illegible]	.9	1.5			1.5	1.5	1.5	1.7	1.8	1.7	1.6	1.6	1.7	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.6	1.4	2.0	.9	1.0	2.0	1.3	1.5	1.7
1.7	1.6	1.4	1.3	1.2	1.2	1.3	1.3	1.3	1.6	[illegible]	[illegible]	1.5	1.8	1.3	1.5	1.3	1.4	1.3	1.0	1.1	1.0	.9	1.0	.9	.6	.4	.6	.5	.6	.3	.4	.6	.9	1.5	1.7
1.9	1.8	1.9	1.6	1.1	1.1	1.1	1.3	1.4	1.0	1.5	1.5	1.7	1.7	1.5	1.4	.9	.9	.9	.9	1.1	.9	1.0	.9	.8	.7	.7	.6	.4	.8	.6	.6	.9	1.4	1.6	1.9
2.1	2.2	2.3	2.1	1.5	1.4	.8	.7	1.0	[illegible]	1.2	[illegible]	1.5	1.6	1.5	1.5	1.4	1.2	1.0	1.2	1.5	[illegible]	1.2	1.2	1.4	1.2	1.2	1.7	1.5	1.6	1.4	1.1	1.0	1.6	1.7	2.1
2.0	1.9	1.9	1.8	1.2	1.0	.7	.9	1.0	1.4	1.7	1.7	1.8	1.6	1.3	1.2	1.3	1.2	1.1	.9	.8	1.0	1.2	1.5	1.5	1.4	1.4	1.2	1.7	1.8	1.6		1.5	1.4	1.7	1.7
2.3	2.3	1.9	2.0	1.6	1.3	1.3	1.4	.8	2.1	1.9	2.0	2.2	2.0	1.3	1.2	1.1	1.3	1.2	1.3	1.2	1.4	2.1	1.3	1.6	1.9	2.2	1.7	1.8	2.0	2.3	2.1	1.8	2.0	1.9	1.9
2.5	2.0	1.9	1.9	2.0	2.0	2.0	1.9	1.9	[illegible]	2.1	2.0	2.2	1.6	1.3	1.0	1.2	1.7	1.4	1.3	1.2	1.3	.9	2.1	1.7	1.3	1.7	1.6	1.2	1.7	.9	1.9	2.0	2.4	2.4	2.3
2.2	1.8	1.7	1.7	1.7	1.6	2.1	1.7	1.9	2.1	2.5	2.8	2.4	2.1	1.8	1.8	1.5	1.6	1.7	2.0	2.5	2.0	1.8	1.9	2.2	2.3	1.5	1.6	1.7	2.0	2.2	2.4	2.5	2.1	2.1	2.3
2.1	2.0	1.6	1.5	1.7	1.5	1.5	1.6	1.7	1.8	2.2	2.7	2.5	2.5	1.8	1.2	1.3	1.4	1.5	2.4	2.5	2.2	1.7	2.0	2.1	1.9	1.7	1.9	1.6	1.6	2.0	2.0	[illegible]	1.8	2.3	2.5
2.3	2.3	2.1	2.2	2.4	2.3	1.9	1.7	1.7	1.9	1.8	2.1	2.3	2.2	1.9	1.5	1.5	1.9	2.0	2.5	2.7	2.9	2.6	2.1	2.0	1.9	1.5	1.4	1.4	1.1	1.5	1.6	1.5	1.4	1.8	2.2
2.0	2.1	1.8	2.3	2.7	2.7	2.4	2.1	1.7	2.0	1.9	1.9	1.6	1.4	1.8	2.1	2.0	2.2	1.8	2.4	2.5	2.9	2.7	2.6	2.6	2.1	2.0	1.6	1.1	1.4	1.8	1.9	1.7	.8	1.6	2.0
2.3	2.1	2.2	2.3	2.6	2.5	2.7	2.4	2.2	2.1	2.3	2.3	[illegible]	2.2	2.3	2.6	2.4	2.3	1.9	1.5	2.2	2.0	2.2	2.3	2.2	1.9	1.9	2.1	1.6	1.6	1.8	1.5	2.2	1.8	1.7	2.0
1.7	1.9	1.7	2.1	2.0	2.0	2.0	1.9	2.0	2.3	[illegible]	2.4	2.1	2.0	2.6	2.6	2.5	3.0	2.5	2.4	2.0	2.2	2.1	1.8	1.9	1.8	1.8	1.8	1.6	1.6	1.4	1.4	1.6	1.6	1.5	1.7
1.7	1.6	1.6	1.5	1.2	1.5	1.1	1.3	1.2	1.1	1.1	1.4	1.8	1.7	1.7	2.2	2.4	2.5	2.7	2.3	2.2	1.7	1.8	1.8	1.6	1.5	1.5	1.5	1.1	1.3	1.8	1.5	1.5	1.2	1.5	1.3
1.5	1.2	1.4	1.2	1.4	.7	.8	1.1	1.0	1.5	1.3	[illegible]	2.2	1.6	1.7	2.0	1.9	2.1	2.0	2.1	1.8	1.8	1.6	1.6	1.7	1.0	1.5	1.5	1.5	1.4	1.4	1.7	1.5	1.5	1.4	1.5
.4	.8	1.1	1.7	1.5	1.5	1.6	1.7	1.5	1.8	2.0	2.4	1.3	1.0	.8	1.0	1.6	2.2	2.8	3.3	2.7	3.2	2.9		1.1	1.1	1.3	1.9	1.8	2.2	2.0				1.0	.4

TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)
DATA TYPE:- DRIFTER
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for drifting buoy.

Area monitored :10°N - 80°N, 85°W - 0°W

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :All hours combined.

Elements monitored :Mean sea-level pressure (hPa)
:Wind speed ($m\ s^{-1}$)
:Wind direction (degrees)

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. A positive bias indicates the observation is veered to the background

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors

GROSS ERROR LIMITS :15 hPa (pressure)
:25 $m\ s^{-1}$ (Vector Wind)

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 $m\ s^{-1}$

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
25552	72.3	-18.9	ALL	MSLP	SUR	167	0	0	1.0	-0.5	1.2
25565	58.5	-51.1	ALL	MSLP	SUR	657	0	0	1.4	-0.2	1.5
29508	34.1	-50.5	ALL	MSLP	SUR	4	0	0	1.1	-0.9	1.4
39508	35.2	-41.4	ALL	MSLP	SUR	4	0	0	0.8	-2.1	2.3
44546	37.4	-52.9	ALL	MSLP	SUR	276	0	0	1.2	2.0	2.4
44547	38.8	-54.4	ALL	MSLP	SUR	296	0	0	1.5	-0.9	1.8
44548	38.0	-58.0	ALL	MSLP	SUR	276	0	0	1.0	-1.5	1.8
44613	49.8	-35.7	ALL	MSLP	SUR	677	4	1	2.7	-0.7	2.8
44616	56.5	-40.0	ALL	MSLP	SUR	1528	1	0	1.1	0.5	1.3
44624	46.3	-14.0	ALL	MSLP	SUR	1094	5	0	0.8	-0.1	0.8
44726	54.4	-12.1	ALL	MSLP	SUR	1432	3	0	1.2	0.4	1.2
44728	56.5	-41.1	ALL	MSLP	SUR	1434	3	0	1.3	-0.1	1.3
44742	60.0	-34.9	ALL	MSLP	SUR	1854	3	0	1.1	-0.1	1.1
44760	34.8	-30.9	ALL	MSLP	SUR	638	1	0	0.9	0.0	0.9
44762	52.3	-10.2	ALL	MSLP	SUR	4	1	25	4.2	5.5	6.9
44769	52.5	-35.7	ALL	MSLP	SUR	1443	2	0	1.3	-0.2	1.4
44770	35.2	-40.8	ALL	MSLP	SUR	790	1	0	1.4	-0.4	1.4
44777	37.1	-39.9	ALL	MSLP	SUR	499	0	0	0.9	0.1	0.9
44780	54.6	-13.8	ALL	MSLP	SUR	1547	3	0	0.9	-0.1	0.9
50803	35.8	-46.3	ALL	MSLP	SUR	1	0	0	0.0	2.5	2.5
61541	35.2	-3.4	ALL	MSLP	SUR	6	0	0	0.8	-9.9	9.9
62511	46.9	-12.7	ALL	MSLP	SUR	504	2	0	0.7	0.6	0.9
62517	47.0	-22.6	ALL	MSLP	SUR	581	0	0	0.8	0.3	0.8
62518	45.6	-15.4	ALL	MSLP	SUR	561	0	0	0.7	0.0	0.7
62519	48.5	-18.4	ALL	MSLP	SUR	376	0	0	0.9	-0.1	0.9
62524	27.5	-48.0	ALL	MSLP	SUR	730	0	0	1.2	0.7	1.4
62673	57.6	-26.3	ALL	MSLP	SUR	885	5	1	1.3	0.7	1.5
64529	59.8	-25.8	ALL	MSLP	SUR	1	0	0	0.0	-5.2	5.2
64575	64.6	-26.1	ALL	MSLP	SUR	982	1	0	1.9	0.5	2.0
64576	60.1	-14.4	ALL	MSLP	SUR	315	0	0	0.7	0.1	0.7
64577	60.7	-9.1	ALL	MSLP	SUR	841	0	0	0.9	-0.1	0.9
65562	63.1	-17.6	ALL	MSLP	SUR	1800	0	0	1.0	-0.2	1.1
65581	57.6	-43.1	ALL	MSLP	SUR	1431	0	0	1.3	-0.4	1.3
65594	62.4	-29.7	ALL	MSLP	SUR	1843	2	0	1.6	0.0	1.6
WIND SPEED											
29508	34.1	-50.5	ALL	SPEED	SUR	3	0	0	2.6	4.2	5.0
39508	35.2	-41.4	ALL	SPEED	SUR	4	0	0	1.8	2.4	3.0
44613	49.8	-35.7	ALL	SPEED	SUR	245	1	0	2.6	-0.3	2.7
44742	60.0	-34.9	ALL	SPEED	SUR	1282	0	0	2.9	-3.8	4.7
44762	52.3	-10.2	ALL	SPEED	SUR	3	0	0	5.3	1.1	5.4
50803	35.8	-46.3	ALL	SPEED	SUR	1	0	0	0.0	-1.6	1.6
62518	45.6	-15.4	ALL	SPEED	SUR	542	0	0	1.5	0.3	1.5
WIND DIRECTION											
29508	34.1	-50.5	ALL	DIRN.	SUR	3	0	0	13.9	-8.8	16.5
39508	35.2	-41.4	ALL	DIRN.	SUR	4	0	0	6.6	1.6	6.8
44613	49.8	-35.7	ALL	DIRN.	SUR	225	1	0	73.0	26.0	77.5
44742	60.0	-34.9	ALL	DIRN.	SUR	964	0	0	25.3	27.9	37.7
44762	52.3	-10.2	ALL	DIRN.	SUR	3	0	0	103.1	-9.7	103.6
50803	35.8	-46.3	ALL	DIRN.	SUR	1	0	0	0.0	-21.5	21.5
62518	45.6	-15.4	ALL	DIRN.	SUR	285	0	0	15.7	-3.6	16.1

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures: **Period**		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:40°N - 70°N, 60°W - 0°W.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:All hours combined.
Level(s) monitored		:300.0 - 150.0 hPa
Elements monitored		:TEMP in °C ; WIND in $m\ s^{-1}$
Parameters monitored	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.
GROSS ERROR LIMITS		:10.0 °C ; 60 $m\ s^{-1}$ Vector Wind
SELECTION CRITERIA		:N REP $\geq$ 20

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	3361	0	1	1.8	-0.2	3354	0	2	0	8.3	1.6
AAN	103	1	3	2.4	-0.2	102	0	2	0	9.1	0.8
ACA	1138	0	1	2.1	0.2	1167	0	2	0	7.5	1.0
ACU	26	0	0	1.3	-0.5	26	0	0	0	5.9	0.0
AEA	175	9	100	4.1	1.5	171	1	11	0	8.8	1.1
AEL	446	1	5	1.6	-0.4	453	0	4	0	7.2	0.6
AFL	279	3	100	2.7	1.2	280	0	6	1	10.4	1.9
AFR	838	1	5	1.8	-0.1	858	0	5	0	7.8	1.6
AIC	54	4	9	2.6	-1.2	53	0	4	0	11.6	2.7
AIH	147	0	1	1.6	0.1	154	0	3	0	8.1	1.3
AME	24	4	13	1.9	0.4	25	0	12	0	7.4	2.2
AMT	84	4	7	2.3	0.5	96	0	6	0	10.6	1.7
AMX	104	0	2	1.6	-0.2	105	0	1	0	7.8	1.7
ANZ	185	1	2	2.1	-0.9	185	0	3	1	7.3	0.6
AOM	292	1	2	1.6	0.7	295	0	3	0	8.0	1.6
AUA	65	0	5	2.1	-0.1	66	0	6	0	7.8	2.8
AVA	121	2	2	2.0	0.0	122	0	2	0	7.8	0.8
AZA	506	0	2	1.9	-0.2	511	0	2	0	8.0	1.9
BAL	254	0	19	2.0	-0.7	260	1	21	0	8.0	1.1
BAW	1533	1	2	1.9	0.0	1537	0	3	0	7.6	1.2
BWA	94	2	4	2.0	1.0	94	0	6	1	6.4	0.6
CDN	747	0	1	1.8	0.3	747	0	2	1	7.1	1.3
CFG	500	0	2	2.0	-0.8	509	0	4	0	8.4	0.7
CKS	33	0	0	1.3	0.2	32	0	9	0	12.5	-0.5
CKT	62	0	8	1.6	0.2	63	0	10	0	8.7	0.3
CLI	214	0	2	2.2	0.6	211	0	2	1	7.3	1.1
CLX	67	0	0	1.5	-0.5	67	0	0	0	6.3	1.0
CMM	222	0	18	2.0	0.1	226	0	18	0	7.5	1.5
COA	383	1	3	2.1	0.9	387	0	4	1	8.2	0.5
CRL	199	1	4	1.7	0.5	201	0	4	0	7.4	0.5
CSA	26	0	0	1.5	-0.3	26	0	4	0	11.0	3.1
CTM	86	1	19	2.4	-0.8	91	0	25	0	9.7	2.5
CUB	295	2	18	3.0	1.7	299	0	100	0	12.6	2.6
DAF	27	0	4	2.7	-0.3	28	0	0	0	7.2	1.7
DAL	3103	0	1	1.9	0.4	3118	0	2	0	8.1	1.2
DHL	431	2	100	3.5	-1.5	437	0	4	1	9.0	0.8
DLH	2406	0	8	2.0	0.2	2403	0	10	2	7.9	1.3
DOA	185	0	15	1.9	0.5	188	1	15	0	8.2	0.9
ELY	161	1	6	2.4	0.0	169	0	5	0	8.2	0.9
FDX	449	1	3	1.8	0.6	455	0	4	0	8.2	1.6
FIN	541	0	2	1.8	0.3	536	0	3	1	7.7	0.9
GAF	120	1	3	2.1	0.2	123	0	3	0	7.7	1.0
GFA	31	0	0	1.5	-0.3	31	0	0	0	7.3	2.0
HLA	32	0	13	2.4	-1.2	33	0	18	0	12.0	-0.6
HLF	82	1	5	1.9	-0.8	84	0	4	0	9.5	0.9
IBE	1271	1	17	1.8	0.4	1281	0	19	0	9.1	1.4
ICE	452	0	1	2.0	-0.4	441	0	2	0	7.3	1.2
KAC	23	0	4	1.3	-0.7	23	0	0	0	8.7	1.7
KLM	2190	0	2	2.0	0.0	2201	0	2	0	7.9	1.5
LDA	84	0	6	1.9	-1.0	84	0	8	0	8.6	0.1
LDI	213	0	1	1.9	-1.0	211	0	2	0	7.4	1.1
LIB	144	1	2	1.8	0.6	144	0	6	1	8.8	0.7
LOT	638	0	0	2.0	-0.4	638	0	2	0	8.2	0.7
LTU	451	0	5	1.8	0.5	449	0	5	0	8.5	0.9
MAH	23	0	0	2.2	0.5	23	0	0	0	8.5	2.4
MPH	578	1	3	2.0	-0.5	578	0	2	0	7.4	0.7
NAT	21	0	0	1.5	0.5	21	0	0	0	7.4	3.0
NUG	54	0	100	2.0	-1.9	54	0	100	0	3.8	0.7
NWA	2449	0	1	2.1	0.8	2502	0	3	1	7.6	0.9

		TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
OAL	34	0	6	1.8	1.0	35	0	6	0	8.7	2.1
RIA	66	2	76	3.9	2.9	70	0	19	0	13.7	4.4
RJA	51	0	0	1.9	0.9	53	0	0	0	6.5	2.0
ROY	37	0	5	2.3	-0.8	36	0	3	3	7.0	-0.5
RRR	226	1	17	2.2	-0.3	228	0	23	1	10.6	2.0
SAB	71	0	1	1.6	0.0	72	0	1	0	6.9	1.3
SAS	1439	0	1	2.0	-0.2	1436	0	1	0	7.8	1.3
SIA	57	0	4	2.2	-1.0	59	0	0	0	10.0	2.3
SPP	88	1	6	1.4	-0.2	90	0	11	0	7.6	1.2
SVA	210	5	6	1.8	0.1	224	0	5	0	8.9	1.1
SWR	167	1	7	1.9	-0.4	168	0	7	0	9.9	2.2
TAP	449	1	13	1.7	-0.2	453	0	12	0	9.1	1.7
TEJ	77	0	17	1.8	0.3	77	0	19	0	9.0	2.5
TOW	163	1	4	1.5	0.1	172	0	3	0	9.0	1.4
TSC	145	1	1	1.9	0.5	149	0	4	0	10.3	2.8
TWA	1383	0	2	1.9	-0.2	1375	0	3	0	8.5	1.5
UAL	2084	0	2	2.1	-0.7	2128	0	3	0	8.1	1.2
UKR	26	0	15	3.3	2.1	26	0	35	0	20.8	1.9
ULE	162	0	6	1.5	-0.2	162	0	8	1	10.1	2.0
UPS	469	1	13	1.6	-0.1	473	0	15	0	8.2	1.6
USA	262	0	2	1.9	-0.7	260	0	2	0	7.9	1.8
VIA	93	0	0	1.6	0.9	94	0	2	1	5.9	1.2
VIR	255	0	1	1.4	-0.3	257	0	1	0	7.8	2.6
WOA	154	0	1	1.6	0.6	156	1	1	0	7.6	1.3
BA	8193	0	21	1.6	0.5	8192	0	21	0	7.3	1.5
KL	4226	1	49	1.7	0.9	4225	0	15	0	8.0	1.4
LH	334	0	18	1.4	-0.2	334	0	18	0	6.3	1.4
M	121	2	100	3.9	2.1	119	0	100	0	11.9	1.7
N	242	0	2	2.7	0.8	252	0	2	0	8.2	1.3

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	00	Z	100	1	0	0.0	5.0	5.0
EHOA	12	Z	100	15	1	46.7	48.3	-12.2
FNOU	00	Z	100	12	0	15.6	17.8	8.5
FNOU	12	Z	100	14	0	16.9	17.1	2.8
FNPH	00	Z	100	9	0	15.6	19.3	-11.3
FNPH	12	Z	100	8	0	16.6	28.6	-23.3
FNRS	00	Z	100	21	0	20.2	21.3	-6.8
FNRS	12	Z	100	20	0	14.3	22.3	-17.2
GACA	00	Z	100	27	0	10.2	12.2	6.6
GACA	12	Z	100	27	0	11.0	11.0	-0.1
JBOA	00	Z	100	1	0	0.0	24.0	24.0
JCCX	00	Z	100	1	0	0.0	33.0	33.0
JDWX	00	Z	100	1	0	0.0	9.0	-9.0
JGQH	00	Z	100	1	0	0.0	55.0	55.0
LDWR	00	Z	100	31	0	13.5	14.4	4.9
LDWR	12	Z	100	30	0	14.5	14.5	1.4
OXVH2	00	Z	100	20	0	15.9	15.9	0.0
OXVH2	12	Z	100	17	0	23.6	23.9	-3.8
OXYH2	00	Z	100	18	0	32.3	34.0	10.8
OXYH2	12	Z	100	20	0	22.4	27.9	16.6
SHIP	12	Z	100	1	0	0.0	21.0	21.0
SHIPS	00	Z	100	10	0	16.2	22.1	15.1
SHIPS	12	Z	100	5	0	18.4	51.4	48.0
VNAA	00	Z	100	1	0	0.0	48.0	48.0
V2GH	00	Z	100	11	0	22.2	26.8	-15.0
V2GH	12	Z	100	20	0	23.9	30.5	-18.9
V2LV	00	Z	100	25	0	20.2	21.9	-8.4
V2LV	12	Z	100	18	0	28.3	37.3	-24.3
V2LX	00	Z	100	25	0	15.8	16.1	3.5
V2LX	12	Z	100	25	0	10.9	10.9	-0.8
WTEA	00	Z	100	4	0	29.5	31.3	-10.5
WTEA	12	Z	100	2	0	6.0	26.7	-26.0
03953	00	Z	100	31	0	13.9	16.3	8.6
03953	12	Z	100	31	0	14.5	15.4	5.2
04018	00	Z	100	30	0	14.2	31.8	28.5
04018	12	Z	100	30	0	14.7	36.3	33.1
04220	00	Z	100	31	0	20.1	34.3	27.7
04220	12	Z	100	31	0	15.6	31.0	26.8
04270	00	Z	100	31	0	11.3	23.7	20.9
04270	12	Z	100	30	0	11.1	20.3	17.1
04339	00	Z	100	30	0	10.6	18.3	14.9
04339	12	Z	100	31	0	13.8	21.5	16.5
04360	00	Z	100	30	0	13.1	24.9	21.2
04360	12	Z	100	31	0	18.1	29.3	23.0
08001	00	Z	100	25	0	17.2	23.0	15.2
08001	12	Z	100	28	0	20.0	20.0	0.5
08508	00	Z	100	31	0	22.6	23.9	7.9
08508	12	Z	100	30	0	23.3	23.6	-3.8
08594	00	Z	100	1	0	0.0	0.0	0.0
08594	12	Z	100	26	1	15.1	15.2	-1.9
60020	00	Z	100	30	0	17.7	21.1	11.5
60020	12	Z	100	31	0	17.0	17.1	-1.9
71600	00	Z	100	31	0	19.9	23.0	11.6
71600	12	Z	100	28	0	16.9	18.4	7.4
72201	00	Z	100	29	0	22.5	30.5	20.5

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
72201	12	Z	100	30	0	21.4	32.9	25.0
72402	00	Z	100	29	0	22.4	54.6	49.8
72402	12	Z	100	27	0	22.4	58.4	54.0
74494	00	Z	100	29	0	19.1	26.0	-17.7
74494	12	Z	100	30	0	25.6	37.3	27.1
78016	00	Z	100	24	0	13.9	21.0	-15.7
78016	12	Z	100	26	0	15.1	15.4	-2.6

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures:

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :500 hPa.

Element monitored :GEOPOTENTIAL HEIGHT in metres

Parameters monitored :NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:SD :SD of difference of observations from background values at level shown excluding those with gross errors.

:BIAS :Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBLK	00	Z	500	1	0	0.0	7.0	7.0
EHOA	12	Z	500	17	0	11.3	24.0	21.2
FNOU	00	Z	500	13	0	9.6	10.5	4.3
FNOU	12	Z	500	15	0	10.4	11.8	5.5
FNPH	00	Z	500	12	0	5.3	5.3	-0.3
FNPH	12	Z	500	12	0	6.1	6.2	-0.9
FNRS	00	Z	500	21	0	16.2	16.2	0.8
FNRS	12	Z	500	20	0	11.1	11.4	-2.8
GACA	00	Z	500	27	0	11.8	12.1	2.4
GACA	12	Z	500	27	0	10.2	10.2	0.3
JBOA	00	Z	500	1	0	0.0	1.0	1.0
JCCX	00	Z	500	1	0	0.0	2.0	2.0
JDWX	00	Z	500	1	0	0.0	5.0	-5.0
JGQH	00	Z	500	1	0	0.0	23.0	23.0
LDWR	00	Z	500	31	0	12.2	13.9	6.7
LDWR	12	Z	500	30	0	11.0	11.3	-2.7
OXVH2	00	Z	500	20	0	11.3	13.3	-6.9
OXVH2	12	Z	500	18	0	16.9	18.6	-7.7
OXYH2	00	Z	500	18	0	12.6	12.7	-2.1
OXYH2	12	Z	500	20	0	11.1	11.1	-0.8
SHIP	00	Z	500	1	0	0.0	21.0	21.0
SHIP	12	Z	500	1	0	0.0	0.0	0.0
SHIPS	00	Z	500	12	0	20.0	20.0	1.2
SHIPS	12	Z	500	7	0	8.6	9.0	2.9
VNAA	00	Z	500	1	0	0.0	47.0	47.0
V2GH	00	Z	500	15	0	13.2	13.4	-1.9
V2GH	12	Z	500	23	0	14.6	15.9	-6.4
V2LV	00	Z	500	27	0	11.1	11.2	-1.0
V2LV	12	Z	500	24	0	13.3	15.1	-7.3
V2LX	00	Z	500	25	0	9.4	10.3	4.2
V2LX	12	Z	500	25	0	10.2	11.2	4.8
WTEA	00	Z	500	5	0	12.5	12.5	1.0
WTEA	12	Z	500	3	0	3.3	9.9	-9.3
03953	00	Z	500	31	0	9.6	11.4	6.2
03953	12	Z	500	31	0	10.6	10.6	0.5
04018	00	Z	500	30	0	11.4	14.3	8.6
04018	12	Z	500	30	0	14.4	14.8	3.6
04220	00	Z	500	31	0	11.2	11.2	0.4
04220	12	Z	500	31	0	10.9	10.9	0.7
04270	00	Z	500	31	0	11.5	13.4	6.8
04270	12	Z	500	31	0	8.5	8.8	-2.5
04339	00	Z	500	30	0	11.5	11.5	-0.7
04339	12	Z	500	31	0	13.6	14.0	-3.3
04360	00	Z	500	31	0	12.2	12.5	2.8
04360	12	Z	500	31	0	14.0	15.3	-6.0
08001	00	Z	500	29	0	12.8	17.0	11.3
08001	12	Z	500	31	0	16.9	16.9	1.3
08508	00	Z	500	31	0	13.2	13.5	2.8
08508	12	Z	500	29	0	10.9	11.0	-1.4
08594	00	Z	500	1	0	0.0	2.0	2.0
08594	12	Z	500	28	0	10.0	11.8	6.2
60020	00	Z	500	30	0	12.0	24.4	21.3
60020	12	Z	500	29	0	9.5	17.0	14.1
71600	00	Z	500	31	0	9.6	9.6	0.5
71600	12	Z	500	29	0	13.5	13.5	0.3

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
72201	00	Z	500	30	0	13.2	18.1	12.4
72201	12	Z	500	30	0	7.3	12.6	10.2
72402	00	Z	500	30	0	8.3	18.7	16.8
72402	12	Z	500	30	0	10.5	21.7	19.0
74494	00	Z	500	30	0	8.5	8.9	-2.7
74494	12	Z	500	30	0	10.0	10.9	4.2
78016	00	Z	500	24	0	13.1	13.1	-0.1
78016	12	Z	500	27	0	13.4	14.0	3.9

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in $m\ s^{-1}$
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
GROSS ERROR LIMITS	:Defined in Appendix I.2	

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	00	V	100	1	0	100	7.3	-0.6	-0.2
EHOA	12	V	100	15	0	0	1.5	-1.6	0.8
FNOU	00	V	100	12	0	0	4.6	-0.5	-1.8
FNOU	12	V	100	14	0	0	3.2	-0.2	-0.7
FNPH	00	V	100	8	0	0	3.2	1.0	0.2
FNPH	12	V	100	8	0	0	3.2	-0.3	1.2
FNRS	00	V	100	19	0	0	3.2	-0.6	-1.0
FNRS	12	V	100	18	0	0	2.5	-1.2	-1.1
GACA	00	V	100	27	0	0	3.2	-1.3	-0.3
GACA	12	V	100	25	0	0	2.3	-2.8	-0.2
JBOA	00	V	100	1	0	0	3.0	0.3	-2.6
JCCX	00	V	100	1	0	0	3.0	-3.5	-1.2
JDWX	00	V	100	1	0	0	3.0	0.4	-1.1
JGQH	00	V	100	1	0	0	3.0	0.1	1.2
LDWR	00	V	100	31	0	0	3.0	-0.5	-0.6
LDWR	12	V	100	30	0	0	1.7	-0.3	-1.2
OXVH2	00	V	100	20	0	0	1.6	-0.5	0.2
OXVH2	12	V	100	16	0	0	1.9	-0.4	-0.4
OXYH2	00	V	100	18	0	0	2.5	-0.2	0.1
OXYH2	12	V	100	19	0	0	1.8	-0.4	-0.2
SHIPS	00	V	100	9	0	0	1.7	-1.1	0.6
SHIPS	12	V	100	2	0	50	1.7	0.2	-15.8
VNAA	00	V	100	1	0	0	1.7	-2.5	0.9
V2GH	00	V	100	11	0	0	4.0	-0.9	1.5
V2GH	12	V	100	19	0	5	3.0	-2.0	0.2
V2LV	00	V	100	24	0	0	3.3	1.7	0.7
V2LV	12	V	100	17	0	0	4.6	1.1	-2.2
V2LX	00	V	100	24	0	0	3.6	1.0	-0.5
V2LX	12	V	100	24	0	0	4.5	-0.4	-0.7
WTEA	00	V	100	4	0	0	3.2	-2.3	1.2
WTEA	12	V	100	2	0	0	4.1	-2.0	0.8
03953	00	V	100	31	0	0	2.2	0.1	0.3
03953	12	V	100	31	0	0	1.6	-1.3	0.3
04018	00	V	100	29	0	0	2.2	-0.4	-1.3
04018	12	V	100	30	0	0	2.6	-0.6	-1.6
04220	00	V	100	30	0	3	1.7	0.4	1.2
04220	12	V	100	31	0	0	6.2	0.5	-0.2
04270	00	V	100	31	0	0	1.9	-0.3	1.0
04270	12	V	100	29	0	0	2.7	0.4	0.5
04339	00	V	100	30	0	0	1.7	0.6	-0.1
04339	12	V	100	31	0	0	2.3	0.5	-0.8
04360	00	V	100	29	0	0	2.3	0.3	0.6
04360	12	V	100	31	0	0	2.7	0.5	0.1
08001	00	V	100	24	0	0	2.4	0.7	2.4
08001	12	V	100	28	0	0	2.8	-0.5	0.6
08508	00	V	100	31	0	0	2.7	0.7	-0.8
08508	12	V	100	30	0	0	2.6	0.2	-0.8
08594	00	V	100	1	0	0	2.8	-1.1	2.5
08594	12	V	100	28	0	0	2.8	1.8	0.5
60020	00	V	100	30	0	0	4.0	0.9	1.8
60020	12	V	100	31	0	0	3.7	-2.4	-1.5
71600	00	V	100	31	0	0	11.9	-1.3	0.3
71600	12	V	100	28	0	0	2.9	-0.8	-0.1
72201	00	V	100	26	0	0	2.0	0.5	-0.3
72201	12	V	100	29	1	3	3.8	2.3	-4.3

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72402	00	V	100	25	0	0	3.4	-1.3	-0.4
72402	12	V	100	25	0	0	2.9	0.7	-0.5
74494	00	V	100	29	0	0	8.3	-0.5	1.1
74494	12	V	100	29	0	0	2.4	0.4	0.1
78016	00	V	100	24	0	0	3.8	-1.5	-0.8
78016	12	V	100	27	0	0	3.8	0.9	-0.9

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH:AUGUST, 95

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :500 hPa.

Element monitored :VECTOR WIND in $m\ s^{-1}$

Parameters monitored

- :NUM OBS :Number of observations available at level shown during period.
- :NUM GROSS :Number of gross errors at level shown during period.
- :% REJ :Percentage of observations rejected by quality control at level shown during period.
- :UBIAS,VBIAS:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
- :RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBLK	00	V	500	1	0	0	2.7	-0.1	1.3
EHOA	12	V	500	16	0	0	3.3	-1.2	-1.4
FNOU	00	V	500	12	0	0	4.5	0.4	-0.2
FNOU	12	V	500	15	0	0	2.2	0.6	0.5
FNPH	00	V	500	11	0	0	2.9	-0.3	0.1
FNPH	12	V	500	12	0	0	3.9	-0.8	-0.3
FNRS	00	V	500	19	0	0	3.1	1.2	-0.2
FNRS	12	V	500	17	0	0	3.1	-1.4	-0.5
GACA	00	V	500	27	0	0	4.4	-0.5	-0.1
GACA	12	V	500	27	0	0	2.4	-0.8	0.2
JBOA	00	V	500	1	0	0	3.6	-3.7	-0.8
JCCX	00	V	500	1	0	0	3.6	-1.1	1.3
JDWX	00	V	500	1	0	0	3.6	2.6	-0.4
JGQH	00	V	500	1	0	0	3.6	-0.1	0.6
LDWR	00	V	500	31	0	0	3.6	0.2	-0.4
LDWR	12	V	500	30	0	0	3.1	-0.5	0.4
OXVH2	00	V	500	20	0	0	2.8	0.0	0.1
OXVH2	12	V	500	18	0	0	3.4	0.1	-0.2
OXYH2	00	V	500	18	0	0	2.7	1.0	0.7
OXYH2	12	V	500	20	0	0	4.6	0.4	1.7
SHIP	00	V	500	1	0	0	4.0	3.2	0.1
SHIP	12	V	500	1	0	0	4.0	-0.4	-0.7
SHIPS	00	V	500	11	0	0	4.0	1.0	-0.1
SHIPS	12	V	500	6	0	16	2.3	-1.1	-6.8
VNAA	00	V	500	1	0	100	2.3	2.7	-0.9
V2GH	00	V	500	13	0	0	4.4	-0.9	0.7
V2GH	12	V	500	21	0	4	2.7	-0.1	0.5
V2LV	00	V	500	27	0	0	4.2	0.5	0.7
V2LV	12	V	500	21	0	0	3.1	-0.1	-0.5
V2LX	00	V	500	24	0	0	2.2	1.4	0.4
V2LX	12	V	500	25	0	0	4.0	-0.9	1.0
WTEA	00	V	500	5	0	20	2.2	3.2	-1.3
WTEA	12	V	500	3	0	0	3.1	3.4	-1.1
03953	00	V	500	31	0	0	2.1	0.7	-0.8
03953	12	V	500	31	0	0	2.6	-0.8	-0.2
04018	00	V	500	29	0	0	2.8	0.8	-0.3
04018	12	V	500	30	0	0	3.9	0.7	1.0
04220	00	V	500	31	0	0	3.2	-1.0	-0.5
04220	12	V	500	31	0	0	2.8	-0.5	-1.3
04270	00	V	500	31	0	0	3.4	0.6	1.9
04270	12	V	500	30	0	0	3.8	0.2	0.0
04339	00	V	500	30	0	0	2.5	0.3	0.4
04339	12	V	500	30	0	0	4.3	-0.5	-0.5
04360	00	V	500	31	0	0	3.1	0.2	0.2
04360	12	V	500	31	0	0	3.4	1.1	-0.1
08001	00	V	500	28	0	0	2.5	2.2	0.5
08001	12	V	500	31	0	0	3.3	0.2	0.0
08508	00	V	500	30	0	0	4.4	0.7	0.9
08508	12	V	500	29	0	0	3.3	-0.4	0.3
08594	00	V	500	1	0	0	2.1	-0.7	1.8
08594	12	V	500	27	0	0	2.1	-0.9	1.0
60020	00	V	500	30	0	0	5.1	-0.2	-0.2
60020	12	V	500	29	0	0	3.4	-1.0	-1.5
71600	00	V	500	31	0	0	12.1	0.9	1.0
71600	12	V	500	28	0	0	4.3	0.3	-0.4

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72201	00	V	500	29	0	0	2.3	-0.2	0.1
72201	12	V	500	28	0	0	2.4	-0.2	0.3
72402	00	V	500	29	0	0	2.4	1.6	0.1
72402	12	V	500	30	0	0	3.5	0.4	0.2
74494	00	V	500	30	0	0	11.4	0.2	-0.1
74494	12	V	500	30	0	0	2.4	0.8	1.5
78016	00	V	500	24	0	0	2.8	-1.7	0.1
78016	12	V	500	27	0	0	4.2	-1.5	1.1

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5,10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45